



# KOVERALL

## Heat-Shrinkable Polyester Fabric Covering for Model Airplanes

SIG KOVERALL is a heat-shrinkable polyester based fabric suitable for covering all types of R/C model airplanes. It's the same material that is used on most full-scale fabric covered aircraft today, but in a lighter weight - only 1-1/4 oz. per sq.yd. Like it's full-scale counterpart, SIG KOVERALL is a plain fabric that must be painted after it is put on the airplane. KOVERALL accepts all common model aircraft paints like dope, enamel, or epoxy.

### High Strength - Easy To Apply

**SURFACE PREPERATION:** Sand the framework of the airplane very carefully, removing any rough spots or excess glue. Remember, no covering material will conceal a rough framework. Be sure all surfaces are sanded smooth before proceeding.

**SEAL THE WOOD:** Brush a coat of Sig Nitrate Clear Dope on the bare wood framework to seal the wood. For proper brushing, thin the dope to 3 parts Nitrate Dope to 1 part Sig Dope Thinner. Brush the dope on everywhere that the covering material will make contact with the wood - even on small pieces like rib edges, cap strips, and stringers. When dry, re-sand very lightly with fine sandpaper (220 grit minimum) to remove any fuzz or raised grain.

*Alternate Method: If you plan to use butyrate dope for the color finish of the airplane, then you can substitute butyrate clear dope (Sig Supercoat or Sig Lite-Coat) for the sealer coat, instead of nitrate. This was the common method we used for many years before nitrate dope became available, and it works fine. However, if you plan to use enamel or epoxy paint for the color finish, then you must use Sig Nitrate Clear Dope for the sealer coat -- butyrate dope is not compatible with enamel or epoxy paints.*

*SIG Model Shop Note: When Sig Nitrate Clear Dope first became available, we quickly discovered that it sticks to Koverall just a little better than our old standard Sig Butyrate Dope. For that reason nitrate dope is now always our first choice for the sealer coats on the bare wood and for the first coats on top of the Koverall, regardless of whether the final colors will be butyrate dope, enamel, or epoxy paint. Butyrate Clear Dope is an optional substitute for the sealer coats only when butyrate is going to be used for the entire finish.*

**ADHERING KOVERALL TO THE STRUCTURE:** Sig Koverall is an uncoated plain synthetic fabric. It has no glue on it. To adhere Koverall to a model, you can either dope it on in the traditional silk-and-dope method, or you can use Sig Stix-It Heat-Activated Covering Adhesive. The following instructions will outline both methods.

It's best to cover the airplane in sections -- for instance, first cover the bottom of the right wing panel with one piece of Koverall, then cover the top of the right wing panel with another piece, overlapping the edges around the leading edge. After that cover the bottom of the left wing panel, followed by the top of the left wing panel. Cover the stabilizer, elevators, fin, and rudder all with separate pieces of Koverall. Likewise cover the fuselage in easy to handle separate segments like the top, bottom, left and right sides. Cut each piece of Koverall about an inch larger all the way around than the part being covered.

Note: Grain or weave direction is not important with Koverall like it is with some other fabrics. Koverall will shrink the same amount in all directions.

**APPLYING KOVERALL WITH DOPE:** First apply a second sealer coat of Sig Nitrate Clear Dope to the wood framework. When dry, lightly sand again with fine sandpaper. Lay the pre-cut piece of Koverall on the model part, pulling out any major wrinkles. Koverall shrinks up considerably under heat, so there's no need to worry about small wrinkles or packaging fold creases. They will come out easily when the shrinking is done later. Just make sure the edges of the Koverall will lay down smoothly on the wood without wrinkles.

Begin brushing thinned clear dope (2 parts dope to 1 part thinner) onto the edges of the Koverall. The thin dope will soak through the fabric and adhere the Koverall to the dope that is already dried on the wood framework. Work your way around the entire perimeter of the Koverall, doping the edges down onto the framework. When done, allow the dope to dry completely before trimming off the excess Koverall with a sharp razor blade. Check for any rough edges or places that are not stuck down properly and apply more dope where necessary.

**APPLYING KOVERALL WITH STIX-IT:** Brush a coat of Sig Stix-It Covering Adhesive on the parts of the wood framework where you want the covering to attach. We recommend brushing Stix-It straight out of the can, without additional thinning. However, if the Stix-It you are using is leftover from a previous model and has thickened in the partially filled can to the point that it does not brush out well, then it can be thinned with Sig Dope Thinner used sparingly. Keep in mind that thinning too much can reduce adhesion and make more coats necessary.

When the Stix-It is dry, the Koverall can be applied in the same manner you would a plastic iron-on model covering. Set your iron temperature to approximately 225° F. Lay the pre-cut piece of Koverall on the model part, pulling out any major wrinkles. Use a hot covering iron to press the Koverall down against the model structure. The heat of the iron will activate the Stix-It on the model, gluing the Koverall to the wood. Work your way around the entire perimeter of the Koverall, ironing the edges down tight onto the framework. Let cool completely before trimming off the excess Koverall with a sharp razor blade.

**SHRINKING THE KOVERALL:** After both sides of the model part are covered, shrink the "baggy" central area of the Koverall with a heat gun or an iron set at approx. 300° F. Work the heat gun evenly back and forth over the surface of the Koverall until you see the covering begin to shrink. It will shrink fast once it starts. Keep the heat gun moving to avoid overshrinking one spot. When all the wrinkles are gone, take away the heat and let cool. It's best to shrink both sides of the model part simultaneously to avoid warps.

**SEALING THE KOVERALL:** Give the entire model a coat of Sig Nitrate Clear Dope, brushed on. Thin the dope until it brushes on easily and flows out smooth (approximately 2 parts dope to 1 part thinner). Brush the dope on sparingly over the open framework areas. If too much is applied, the excess dope may rub off the brush, run completely through the covering and puddle against the covering surface on the other side. So apply the dope very lightly the first time over. After the first coat is dry, apply a second coat. The second coat will seal most of the pores of the Koverall, and from that point running through will not be a serious problem. After the second coat is completely dry (overnight), sand the model VERY LIGHTLY with FINE sandpaper to knock off any high spots. Don't sand too hard at this point, as there is actually very little paint on the fabric. Don't bear down on the edges of the balsa structure or the fabric may be cut. Apply a third coat of clear dope and let dry. Again sand lightly with fine sandpaper.

**PRIMER AND COLOR PAINT:** Begin applying the paint finish of your choice. From this point on it's preferable to spray on the finish materials (primer and/or color paint). You will also need to decide whether or not you want the weave of the fabric to show in the final result (like some full-scale fabric covered airplanes do), or whether you want a glass smooth finish with no weave showing (like an all metal airplane). A completely smooth finish with no weave showing can be done with dope, enamel, or epoxy paints. A fabric type finish with some weave showing is typically done with a complete butyrate dope finish. The type of final finish you want to achieve will dictate how many and what type of primer coats to put on at this point.

**SMOOTH FINISH WITH EPOXY, ENAMEL, OR DOPE:** For a glass smooth finish your next step is to apply a coat of "sandable" primer. If your final finish will be epoxy or enamel paint, the manufacturer of your paint will most likely have a sandable primer available. If your final finish is butyrate dope, dope based sandable primer is often called "sanding sealer". Apply the first coat of primer evenly over the entire airplane. When it is completely dry, sand the majority of the primer back off the airplane, leaving only enough to begin filling the weave of the cloth. Then apply a second coat of primer. Again let it dry thoroughly, and then sand it off. Keep putting on coats of primer, sanded well between coats, until the weave of the cloth is completely filled. Then you can spray on your final color coats.

**FABRIC WEAVE FINISH WITH DOPE:** To achieve a realistic "fabric" finish, with a small amount of weave still showing, you don't need to use any special primer. Simply apply 3 to 5 total coats of Sig Lite-Coat Butyrate Clear Dope on the Koverall before going to color. The actual number of coats you need depends somewhat upon how heavy a coat you are putting on. Keep the dope thinned out enough to flow on smoothly. Sand well between coats with 220 grit or finer sandpaper to keep the surface smooth. Once you've achieved the surface texture you want, you can begin spraying on your final color coats of Sig Supercoat Butyrate Color Dope.