

MADE IN GERMANY

ORASTICK®



FREE OF PVC

APPLICATION INSTRUCTIONS

PRESSURE-SENSITIVE, HEAT-SET COVERING FILM

All the superior qualities of **ORACOVER®** plus the convenience of peel-and-stick application! **ORASTICK®** is a high-tech, polymerized polyester covering film that's peel-and-stick applied then heat-shrunk to deliver sag-free, permanent covering, season after season.

ORASTICK® is available in the full range of fade-free **ORACOVER®** colours and its perfect gloss is designed to yield a rich, realistic finish. **ORASTICK®** can be easily painted, too.



Fig. 1 Recommended tools



Fig. 2 Sand surfaces smooth



Fig. 3A Temperature test at approx. 90°C



Fig. 3C Temperature test at approx 150°C

1. TOOLS YOU'LL NEED (Fig. 1)

- Hobby covering iron
- Cutter bar / ruler / scissors
- ORACOLOR®** - filler (ref. no. 0999)
- ORACOVER®** - felt blade (ref. no. 0915)
- Soft cloth / kitchen roll
- Hobby heat gun or paint-stripping gun
- Scalpel (ref. no. 0914) or cutting knife (ref. no. 0916)
- ORASTICK®** - bonding emulsion (ref. no. 0970)
- ORASTICK®** - glue solvent (ref. no. 0990)

2. SURFACE PREPARATION (Fig. 2)

Take time to sand your model completely. Fill any gaps or dents in the surface with filler. Finish with 320 grit sandpaper on a sanding block. Completely vacuum your model and wipe it free of dust.

Place some adhesive tape directly onto the airframe. If you can pull the tape off easily and the tape ends up covered with fine wood particles, then your surface needs more preparation.

If the surface is NOT suitable to take a finish, despite your best efforts, we recommend you apply **ORASTICK®** - bonding emulsion (ref. no. 0970) to your airframe before covering.

3. SETTING THE TEMPERATURE OF YOUR IRON

Correct iron temperature is the key to easy covering of with **ORASTICK®**. Use a pocket or oven thermometer to measure temperature. If you don't have a thermometer, use the following simple checks to adjust your iron:



Fig. 4



Fig. 5a



Fig. 5b



Fig. 6



Fig. 7



Fig. 8

A Low Range (90 °C) - Adhesive becomes very soft and sticky (fig. 3A).

B Medium Range (130 °C) - Midway between high and low.

C High Range (150 °C) - At scrap of **ORASTICK**® will wrinkle and shrink.

D Foam test - An easy and reliable way to find the 90 °C setting on your iron is to test the warm iron on a piece of foam. If the foam “squeaks”, but does not melt when the iron only slides over it, the iron has a temperature of 90 - 95 °C. Depending on the type of foam the melting point is between 95°C and 105 °C.

Note: For especially difficult curves, you can increase the iron temperature from 150 to 200 °C. At 180 °C you can stretch **ORASTICK**®. Bear in mind that **ORASTICK**® starts to melt at approximately 250 °C!

4. APPLICATION OVER OPEN FRAMEWORKS: WING (Fig. 4-8)

Starting with the bottom of the wing, cut a piece of **ORASTICK**® at least 2 cm oversize around the edges and 15 cm oversize at the tip (fig. 4).

Discard the backing paper. We recommend sticking a strip of adhesive tape to both an upper and lower edge of the covering - let strips of tape overlap (fig. 5a). When you then pull off the overlapping ends of the tape, you can easily separate the covering from the paper backing. When discarding the film, always put the covering with the upside on a flat surface (table). Always separate the backing from the covering and not the other way to avoid kinks or wrinkles in the covering (fig. 5b). Lift the covering approximately 8 - 12 cm off the backing paper and fold it back.

Then fold the backing paper under (fig. 6). Trial fit the piece of **ORASTICK**® to the wing undersurface and check for alignment (fig. 6).

When satisfied with its position, lay it over onto the wood, as in fig. 7. Use your hand or a cloth to gently tack the covering in place.

Carefully peel off all the backing. If you find large wrinkles, gently lift the **ORASTICK**® and reposition it, removing the wrinkles (fig. 8).

When you are satisfied, rub the **ORASTICK**® down with a soft cloth or with the **ORACOVER**® - felt blade (ref. no. 0915) in the following sequence:

- 1) “main line”: straight along the main spar, from root to tip.
- 2) from the “main line” in parallel strokes to the leading edge (root to tip).
- 3) from the “main line” in parallel strokes to the trailing edge (root to tip).
- 4) rub all edges securely down

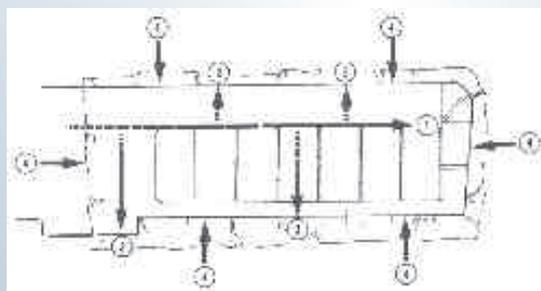




Fig. 9a



Fig. 9b



Fig. 10



Fig. 11



Fig. 12



Fig. 13a

5. PROTECTION OF OVERLAPPING **ORASTICK**[®]

In order to avoid any unwanted bonding of overlapping edges, cover them with pieces of backing paper.



6. COVERING WING TIP (Fig. 9a-e)

Using a cloth and either a hobby iron, or heat gun on a high setting, work **ORASTICK**[®] around the wing tip by small amounts at a time to match the wing tip's compound curves. Use plenty of heat whilst pulling out any wrinkles.



7. TRIM AND SEAL THE EDGES (Fig. 10,11,12)

Trim the edges with our Scalpel (ref. no. 0914) or cutting knife (ref. no. 0916) as shown in fig. 10 and 11 from the inside. Seal the edges with the iron set to 'high' (fig. 12).

8. UPPER WING

Follow the same procedure for covering the upper wing surface. Allow a 1 ½ cm overlap along joins in the covering.



9. COMPLETE THE COVERING (Fig. 13 u. 14)

Using either a hobby iron with a cloth, or a heat gun, or a paint-stripping gun on high, shrink small sections of covering at a time. Rub the **ORASTICK**[®] down with a cloth, or better still: with the **ORACOVER**[®]-felt blade (ref. no. 0915), until it is cool. This ensures the best possible bond with your airframe.

10. COVERING SHEETED SURFACES - OPEN FRAME STRUCTURES

Repeat the procedure for wings described above with one exception: Instead of a *covering iron* use a *heat gun* to shrink **ORASTICK**[®]. Rub firmly with a soft cloth (or the **ORACOVER**[®]-felt blade, ref. no. 0915). This will ensure a good bond to the wood. By using a heat gun you will avoid the dents that can accidentally be created with an iron.

10a. COVERING SHEETED SURFACES - WITH STYRENE FOAM CORES

Superheated steam is used in the production of polystyrene foam cores. This means that many foam wings often contain relatively high levels of residual moisture. At ordinary room temperature a stable microclimate develops inside



Fig. 13b



Fig. 14a



Fig. 14b



Fig. 15



Fig. 16



Fig. 17

the core thus retaining any moisture within. This is the reason why moisture - even after long periods - remains locked within many foam cores.

However, the heat applied during the covering process draws moisture from the cores and can produce bubbles in the film. Sometimes during bubbling, the covering can be physically torn from a wooden surface leaving wood fibres attached to the covering. As a result, you may suffer "permanent wrinkles" where it becomes impossible to iron the covering back onto the wood. To avoid this problem we recommend you apply a thin layer of **ORASTICK**[®] - bonding emulsion (ref. no. 0970) to your wing sheeting as a moisture barrier - and let it dry overnight. Note: it is important to apply a **thin** layer so that the solvent in the adhesive does not damage the foam core. Once this barrier has cured, you can cover the model.

Finally, follow the procedure described above in "Covering sheeted surfaces - open frame structures".

11. COVERING THE FUSELAGE

Your fuselage is covered in the same way as your wing. Start with the bottom, then the sides and finally cover the upper surface. Allow a 1 ½ cm overlap along joins in the covering.



12. TRIMMING

After cutting out a piece of trim, simply position it, remove the backing and rub down as in fig. 15, 16, 17, 18 and 19. When satisfied, go over with the **ORACOVER**[®] - iron or heat gun and cloth or the **ORACOVER**[®] -felt blade (ref. no. 0915).

13. FOAM

Foam can be covered by first tacking your covering into position, then rubbing gently using your hand, a cloth or the **ORACOVER**[®] -felt blade (ref. no. 0915). Judiciously apply heat and rub the surface gently to complete the bonding process.

NOTE: Do not overheat as foam will melt at relatively low temperatures. Test using scrap foam first. In order to avoid damaging the foam surface, do not exceed a temperature of 95 °C.

14. EPP

(Expanded PolyPropylene) To achieve a better bonding on rough and uneven surfaces we recommend you apply a thin layer of **ORASTICK**[®] bonding emulsion (ref. no. 0970). Allow to air-dry overnight. You can apply **ORASTICK**[®] covering on the following day. As the surface will be tacky it is important to apply the covering as smoothly as possible. When ironing and shrinking the covering make sure the iron temperature does not exceed 160 °C as excessive heat may damage the surface material.



Fig. 18



Fig. 19

15. HELPFUL HINTS

CAMBERED PROFILES (S-SHAPED SECTION)

When covering wings with a concave lower surface, tack the **ORASTICK**[®] effectively onto all wooden parts at 90 °C - without shrinking. Then shrink the open bay without heating the sealed parts. It may be useful to make a simple cardboard template, to protect the sealed parts of the structure, when using a heat gun.

VENTILATION HOLES (PRESSURISATION)

When covering open frame structures, tail planes and fins, etc. make sure you have made a few internal ventilation holes. If not, drill holes of 1-2 mm through all ribs and webs. This allows hot air to exhaust out of the entire airframe during the covering process. If hot air is prevented from escaping from a wing bay, it may expand the covering locally, and prevent shrinking causing wrinkles/slack areas after cooling.

FIREWALL

Bond all edges around engine area with a hot iron to prevent oil seepage under the **ORASTICK**[®]. Also coat the inside of the engine area with the two-component paint **ORACOLOR**[®], overlapping this proofer on to the **ORASTICK**[®].

PAINTING

ORASTICK[®] can easily be painted. You will achieve best results using the **ORACOLOR**[®] paint system. **ORACOLOR**[®] is available in the full range of **ORACOVER**[®] / **ORASTICK**[®] colours. As **ORACOLOR**[®] is a two-component paint system, it is fuel-proof and iron-proof, i. e. you can iron over the paint coating without causing damage to it. For adequate paint adhesion dull the surface with 000 grade steel wool and clean it with **ORASTICK**[®] glue solvent (ref. no. 0990).

DECALS

Follow manufacturer's instructions on decal applications.

CLEANING UP

Any colour or adhesive left on your iron or smeared on your covering iron can be removed with a clean rag while the iron is hot. Any residue on the covering can be removed with **ORASTICK**[®] glue solvent (ref. no. 0990). Use this special solvent on your iron only when the iron is **SWITCHED OFF AND COLD!** Do not use the iron if traces of solvent are still present! When working with special solvent make sure the room is aired properly as the special solvent can release gases that are potentially explosive.

PATCHING and REPAIRS

As **ORASTICK**[®] is self-adhesive, field repairs can be made by cleaning the damaged area first. Cut a patch 2 cm oversized and apply over damaged area.

TRIMMING

The patch can be later ironed down securely in the workshop. Since **ORASTICK**[®]'s special adhesive will not bubble when DESIGNS are applied onto the film, it can be used for trim and markings. However, good workmanship is still required because if you are not careful you can trap air bubbles.

MARKINGS ETC.

Applied at low heat, **ORASTICK**[®] adhesive will bond tightly to itself. For optimum coverage, a darker colour should be placed over a lighter one. Smaller trim designs should be positioned and tacked in place at one end: Pull design out at the opposite end and tack down starting from the stuck end without trapping air. Use the **ORACOVER**[®]-felt blade (ref. no. 0915) to position the design on the surface. Larger designs (such as sunbursts) should be positioned and the narrowest end tacked in place. Then, working towards wide end, tack design down.

Pin striping, etc., can be produced by cutting **ORASTICK**[®] into thin strips. To apply multicoloured patterns onto a fuselage or a wing in open framework structure, tack the single patterns on the backing paper on a flat table together. Allow a 1,5 cm overlap at joins. Darker colours should always go over lighter colours, so that the edges of the dark colour do not show through the lighter one. Pay attention to accurate positioning when tacking. When re-ironing the pattern do not overheat the joins the heat could melt the adhesive and shrink the material at the join. If you use a heat gun protect the joins from overheating using a cardboard template, if applicable.

Large surface area trim designs should be glued onto a wet surface as follows: First wet the surface by spraying (using an empty cleaner bottle) a solution of water mixed with one or two drops of washing-up liquid onto the surface. Slide the trim design onto the wet surface. Position the design accurately and squeeze the water out using the **ORACOVER**[®]-felt blade (ref. no. 0915) moving from the middle to the edges of the design. Using this technique you can apply large trim schemes to any surface. We recommend you let the design dry out thoroughly for 1-2 days.

SCALE and CHROME COLOURS

ORASTICK[®] SCALE and CHROME have an aluminium layer just nanometres thick on the undersurface of the covering film. The covering is 100 % opaque. To minimize the RF shielding effect of the covering on a fuselage covered with **ORASTICK**[®] SCALE or CHROME we strongly recommend you lead the aerial through the fuselage and out to the upper edge of the fin / vertical tail, or use a rod aerial. This applies also to wings covered with **ORASTICK**[®] SCALE or CHROME. Do not run the aerial along the wing as this may cause a loss of radio range. You must attach your Rx aerial to the top end of the fin of your model. Observe the same precautions when finishing models containing carbon fibre components.

WOOD and MOISTURE

Models covered under humid or warm conditions are at risk of suffering from sagging covering when later exposed to normal or drier atmospheres. Wood naturally absorbs moisture present in the atmosphere and expands in the process. When it dries, it shrinks and any covering will sag as a result. So cover in dry conditions in order to avoid ironing your film at some later stage!

PLEASE NOTE: Recently, more and more model aircraft with styrene foam wings have appeared on the market. To reduce production costs in many of these models pre-dried foam is no longer used; instead foam containing a relatively high residual moisture content is used. To ensure this moisture stays inside the foam we recommend you create a moisture barrier by applying a thin coat of **ORASTICK**[®] bonding emulsion (ref. no. 0970). Allow to dry overnight.

We would appreciate your comments and suggestions regarding **ORASTICK**[®] and its applications.