Technical Data Sheet

Surf Source 2000 Series Surfboard Epoxy System

Description: **SS 2000** series (2 to 1) laminating system is a two component, 100% solids Epoxy Resin System designed for fiberglass, carbon and Kevlar laminations, coatings, and bonding of composite plastic materials. This System features an easy to use 2 to 1 by volume mix ratio that is 2 parts resin to 1 part hardener. Or by Weight: 45 Parts Hardener/100 Parts Resin. The 2000 series offers easy wet-out, moderate pot-life, when used with our SS 2H230 Hardener great adhesion to foam and a wide variety of other materials including wood, fiberglass, glass, metals and most other plastics. This system cures hard, blush free and crystal clear for optimum manufacturing performance. Cure time may be accelerated by mild heat up or even better by using our SS 20AC (Epoxy Accelerator). As with all Epoxy laminations, proper surface preparation is essential for good bonding. Laminations of this material must be made within 24 hours to ensure a complete bond. If the material has cured past 24 hours, a light sanding and solvent wash will be necessary before further applications.

Shaping - Epoxy Can be used on both **Polyurethane** and **EPS** foam. In fact, stronger more responsive boards, using lighter glass laminations have been emerging using this combination.

For Glassin EPS foam, more work is involved: Place your template on the blank from the tip or back it up an inch or two for desired rocker. When cutting the outline, cut close to your pencil line, very little foam will be lost in the fine sanding of your outline. Styrofoam blanks can be shaped with your planer with blades, but a grit drum may be more desirable. If you tear the foam, don't freak out. These rips can be filled in with lightweight drywall spackling. Usually I only take the shape to 40 grit, then spackle in the whole blank with slightly watered down spackling. My favorite brands are DAP exterior drywall spackling, Creamy Formula and Red Devil Spackling. If you're filling in deep rips, let this application dry thoroughly, then Spackle it one more time. Fine sand your blank with 180 or 220 screen and your ready for glassing.

Glassing - Usually a 6-ounce single layer bottom and a double 6-ounce deck is sufficient. A double 7-ounce deck is extremely strong and doesn't add that much weight if added strength is desired. Instead of filling your lap, use a sander with 80-grit. You will find that it sands great, doesn't clog sandpaper and will allow you to get a true rail shape. Try to glass your bottom and deck within the same 24 hours for best epoxy binding.

Hot Coating - There is a couple of ways to apply a sanding coat to your lamination. First, pre-sand the lamination. This will smooth out your lap and

knock off any burs that would cause roughness. You'll be surprised at how well the lamination sands. For Top results, choose our SS 20BF Hot Coat resin. This product is a 1 to 1 mixture by volume, (100 pt resin to 83 pts. hardener by weight). and offers a blush free, clear finish ready for wet-sand and polishing.

Fin Box Installation - When using EPS foam, mass heating is always an issue when installing fin boxes. It's a good idea to have the board, the resin, and working environment at 80 degrees F or less. EPS foam has a very low tolerance to heat, especially when produced by a mass of curing epoxy. To avoid any overheating problems, it is best to choose a slower curing epoxy hardener such as our SS 2H60, which offers a 60-minute gel time therefore dispersing the heat over time.

Causes and Treatment of Surface Blush - Another problem with curing epoxy in cold conditions is the 'amine blush'. When epoxy cures in the cold, the surface will have a greasy film from the amines in the hardener. This film rapidly clogs sandpaper. The solution; if there's any trace of amine blush (i.e., if the cured epoxy surface feels greasy), just wash it with warm water, to which a tiny bit of dishwashing detergent has been added. The amines are water soluble, and will wash away easily. For a complete reduction of amine blush and an easier sand, try **"QwikSand"** an Epoxy sanding additive by The Surf Source.

Causes of Surface Fish Eye

a) Fish eyes are commonly reported when applying the second coat of a solvent-free epoxy on to a sanded surface. Remaining by-product and insufficient sanding of the first coat are very common causes. Sanding wet achieves by-product removal and gives a good key. When sanding dry it is especially important to remove by-product as it will only clog the sand paper. Use 80-120-grit.

b) If the work has been cleaned down with solvent immediately before recoating epoxy or after sanding bare wood then some solvent may have remained on the surface. Acetone or cellulose thinners are not as good as cleaning materials because they may be contaminated and their use sometimes leads to problems.

c) Check whether cleaning rag was contaminated with other types of solvent. It is likely that if other solvents were used previously, the customer may have inadvertently used one such as this to clean the surface.

d) If the work was wiped down with White Spirit - this is really bad news as it means that epoxy then cannot be used unless all traces are removed, which is almost impossible.

e) Wrong resin-hardener mix ratio can also give the same symptoms in some cases.

f) Traces of contaminant in the atmosphere - e.g. mould release agent aerosols, wax polishes, etc.

g) Some types of pigment dispersed in epoxy resin, may make the problem worse especially when coating is applied in a thin film.

h) Direct heat from the sun may also make problem worse.

i) Syringes can cause this problem if not cleaned out first. This is quite a common cause. Mixing cups or pumps do not have any surface contaminants.

Typical Properties Unfilled Castings of **SS2000** Cured With Various Hardeners **SS2H30, SS2H60** by Weight: 45 Parts Hardener/100 Parts Resin. Gel Time at 25°C (77°F), 100g 12 15 Minutes** 50 70 Minutes** Hardness, Barcol, 934-1 35 40 25 30 Heat Distortion Temperature, °C / °F 99 104 / 210 220) 60 63 / 140 145 Tensile Strength, psi 12 14,000 7 8,000 Tensile Elongation, psi 4 5 5 6 Flexural Strength, psi 20 23,000 12 15,000 Flexural Modulus, psi × 10-5 4.2 4.5 3.6 3.9 Dielectric Strength, S/T, V/M 440 465 400 425 Dielectric Constant, 60 Hz / 106 Hz 3.4 3.5 / 3.3 3.4 3.5 3.6 / 3.3 3.4 Power Factor, 60 Hz / 106 Hz 0.006 0.04 / 0.03 0.04 0.005 0.006 / 0.03 0.04 Water Absorption, Percent Weight 24 Hours at 25°C (77°F) / 2 Hours at 100°C (212°F) 0.1 0.2 / 0.7 0.8 0.1 0.2 / 0.9 1.0 Cure Schedule 24 Hours at 25°C/77°F 24 Hours at 25°C/77°F +2 Hours at 121°C/250°F +2 Hours at 121°C/250°F

*1.0 part Tris (dimethylaminomethyl) -phenol added as accelerator.

**Gel time data should be taken only as a guide, since exact data is highly dependent upon sample mass, container, temperature of the resin and hardener, and room temperature. Small differences in any of these factors will make a difference in the gel time of the resin/hardener mix. It is advisable, therefore, to determine gel time of the mix under actual working conditions.