

## SURF PRO EPOXY SYSTEMS

### Section 1: Description

Kwik Kick was the world's first "Stage 2" Epoxy System. It was developed to solve an age old problem laminators have with epoxy resins and that problem is resin draining into the foam core which adds weight to the finished board.

In the days of polyester resins, laminators could time the gel of the resin by hardener content thus mitigating draining.

Polyester resins are catalytic reactions. In polyester, the hardener merely starts the reaction and is not really a part of the reacted finished polymer. This reaction results in a "hard gel" where the resin goes from liquid to hard gel in seconds.

Epoxyes are addition reaction where the A and B sides react with each other and together form the finished polymer. Since an epoxy reaction is controlled by the original formulation laminators can't fine tune gel time.

Enter "Stage 2" Epoxyes. These resins work in an entirely new way. While still being an addition reaction product, a Stage 2 epoxy will reach a "soft gel" state (Stage 2) where the resin stops flowing (stops draining into the foam) but can still be moved for a period. The advantage to this is no draining and no hard gel either. Instead there's a soft gel allowing extra time to tune up the laminate before its finished allowing the laminator time for a perfect result.

Surf Pro is a newer version of Kwik Kick and is used more for laminating. Today Kwik Kick is still used in laminating but is used more for hot coats. The Stage 2 "soft gel" qualities that keep the resin from draining into the foam also help in hot coating by keeping the resin from draining off the board's rails. Both Surf Pro and Kwik Kick are available in Bio Based formulations and both can also available with optical brighteners.

#### Recommendations:

- Use only surf pro hardener with surf pro resin. The system can be used as laminate or hot coats.

Advantages: Low VOC, Very low color and good color stability, Good chemical resistance, High gloss, Good resistance to amine blush, Variable Toughness vs. Modulus

Storage: At least 12 months from the date of manufacture in the original sealed container at ambient temperature. Store away from heat and excessive humidity in tightly closed containers.

### Section 2: Typical Handling Characteristics

Mix ratio by volume ..... 2 parts resin : 1 part hardener

Mix ratio by weight ..... 100 resin : 44 hardener

Recommended epoxy working temperature ..... 80°F

MATERIAL CHARACTERISTICS	DENSITY (kg/litre)	VISCOSITY (CPS)
SURF PRO RESIN	1.14	600
SURF PRO HARDENER	1.02	400

CURING CHARACTERISTICS	
POT LIFE (100 grams @77F)	13 min
THIN FILM SET (@77F)	1.5 hrs
PEAK EXOTHERM (100g mix @77F)	307 F
FINAL CURE	7 DAYS

Section 3: Typical Cured Properties

Barcol Hardness .....	.84
Compression Yield.....	13,800 psi
Tensile Strength .....	10,500 psi
Tensile Modulus.....	395,000 psi
Flexural Strength.....	14,800 psi
Flexural Modulus.....	465,000 psi
Heat Deflection Temperature.....	120°F
Elongation %.....	4.8%