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[Home](#) > [Product Line & Price List](#) > T-88 Structural Epoxy Adhesive



T-88® Structural Epoxy Adhesive

INTRODUCTION

T-88® is a high performance, non-brittle, two-part epoxy adhesive designed to give superior results under adverse conditions. These include woods such as oak, teak, maple, mahogany, apetong, araki, pau lope, ipe, and other difficult to bond woods. T-88 is also a great all purpose adhesive for other woods, metal, ceramic, glass and many non-polyethylene based plastics.

T-88 has exceptional adhesion to most clean surfaces. However, it does not bond well to tin, zinc or waxy thermoplastics such as polyethylene. When fully cured, it is unaffected by water, oil, gasoline, and virtually all chemicals. It will not stain wood and is immune to fungus and rot.

The adhesive may be used as is, in normally fitted joints, and will cure in any thickness without shrinkage. T-88 is clear amber and becomes virtually invisible when varnished.

T-88 is unique in that it may be applied to damp wood, provided the adhesive is worked well into the surface. Glue line thickness is not critical and clamping is not necessary if the joint is undisturbed during set-up of the adhesive. However, when bonding wood where end-grain is exposed T-88 may be thickened slightly to prevent excessive absorption. Coverage in average bond joints is 50–100 sq. ft. per gal. See special instructions below for bonding oak, teak, and other hard to bond woods.

Packaging

T-88 is available in a 1.6 oz (syringe), 8 oz, 1 Pint, 2 Pint, and 2 Gallon units.

PRODUCT APPLICATION AND USE

T-88's part A and B are mixed 1:1 by volume using a graduated measuring cup. Weight ratio is 100 parts of A to 83 parts of B. Excessive Part B will degrade, rather than expedite cure and should be avoided. Care should be taken that mixing is thorough and streaks can not be seen. The most common error is incomplete mixing. Please mix thoroughly, being sure to scrape the sides and bottom well while mixing.

Pot life of the mixed adhesive is approximately 45 minutes at 70°F. However, a coated joint may still be pulled up tight (clamped) for up to two hours after application, even though the product has started to cure. Both surfaces **MUST** be coated for this to work. It is much simpler to make sure both surfaces are in contact before the pot life has expired. Cap containers promptly after use. Mixing in small lots or with large surface area exposure will extend pot life.

At 70°F, T-88 will harden in 6–8 hours and will reach functional strength in 24 hours. T-88 has been specifically formulated to cure as low as 35°F without reduction in strength; this cure will require approximately one week. At 150°F, T-88 will set within 30 minutes and develop maximum bond strength and impact resistance after 2 hours. If excessive flow-out occurs, allow 2–4 hours at room temperature before heat cure.

NOTE: If you want to use a penetrating epoxy sealer, please do so AFTER bonding with T-88, or lightly sand or scuff the epoxy-treated surface if the penetrating epoxy sealer has been applied.

BONDING WOOD

WHITE OAK

White oak is a highly porous wood with a strong tendency to absorb resin and yield starved joints of substandard strength. Preferred practice is to apply a liberal coat of T-88 to both surfaces, and without mating allow the separate parts to stand open for 30–45 minutes. Dull spots indicate complete absorption and should be touched up with more T-88, after which the structure should be assembled and clamped with minimal pressure, just enough to ensure contact. Alternatively, oak can be pre-sealed with a thin coat of T-88 on both mating surfaces and cured separately; then sand each surface lightly to level, apply fresh T-88 and join lightly.

TEAK

Teak, being an oily wood, must be freed of surface oil to achieve optimum adhesion. With a clean cotton rag liberally moistened with lacquer thinner, vigorously wipe area to be bonded. While surface is still moist with solvent, wipe with a dry rag and allow to dry. If necessary, repeat wiping until surface dries to a whitish color indicating extraction of surface oil. Bond within eight hours of cleaning.

DOUGLAS FIR

Because of its resinous nature, Douglas fir tends to exude minute amounts of material which may act as a weak interlayer when adhesive is applied. To prevent difficulties of this type, sand the wood with 60 to 120 grit abrasive and thoroughly remove sanding debris. Apply adhesive within 48 hours.

BONDING METAL

DEGREASING — ALL METALS

Method One

Vapor degrease — suspend the part in an approved vapor degreaser until solvent droplets no longer condense and drain from the surface. Remove from vapor and allow

to dry.

Method Two

1. Solvent wipe — wipe the surface with clean white cotton rags moistened in clean lacquer thinner.
2. While the surface is still wet with solvent, wipe dry with a second clean dry cotton rag. This will help pick up oil residues rather than allowing them to re-deposit on the surface as solvent evaporates.

ALUMINUM/STAINLESS STEEL

Method One (Recommended)

1. Degrease.
2. Apply an aluminum pretreatment primer or solution.
3. Rinse the metal thoroughly in cold running tap water followed by distilled or deionized water rinse.
4. Bond within 3 hours.

Method Two

1. Degrease.
2. Sandblast to white metal. (Grinding, filing, or sanding can be substituted although sandblasting is preferred).
3. Scour with clean cotton rag and abrasive cleanser.
4. Rinse thoroughly in running cold tap water followed distilled or deionized water rinse.
5. Air dry or oven dry at 500°F maximum.
6. Bond within 3 hours.

STEEL (OTHER THAN STAINLESS)

Method One (Recommended)

1. Degrease.
2. Apply a commercial phosphoric acid solution/primer per manufacturer's instructions.
3. Remove black deposit by scrubbing with a clean bristle brush (not plastic) under cold running tap water; follow with distilled or deionized water rinse.
4. Dry metal promptly for 1 hour at 500°F maximum.
5. Bond within 1 hour.

Method Two

1. Degrease.
2. Sandblast to white metal. (Grinding, filing, or sanding can be substituted although sandblasting is preferred).
3. Degrease again.
4. Bond within 1 hour.

COPPER AND COPPER ALLOYS (BRASS, BRONZE)

Method One (Recommended)

Prepare the following solution:

Ammonium Persulfate 25 pbw

Distilled or Deionized Water 75 pbw

Stir at room temperature until powder dissolves.

Treat the metal as follows:

1. Degrease.
2. Immerse in the above solution for 30 seconds at room temperature.
3. Wash thoroughly in cold, running distilled or deionized water.
4. Dry immediately with a room temperature air stream; hot air may cause staining and tarnishing of the surface.
5. Bond within 1 hour.

Method Two

(See Method Two under Steel (other than stainless) above.)

CONCRETE OR FERROCEMENT

Fresh Concrete

If well cured, scrub with a stiff bristle brush with abrasive cleanser (Ajax, Comet, etc.), rinse well, dry thoroughly before bonding.

Old Concrete

1. Degrease if necessary, scrub as above for fresh concrete.
2. Wearing rubber gloves, apron and eye protection, apply 15 per cent hydrochloric acid solution (CAUTION!) at the rate of 1 gallon to every 5 sq. yds. Allow to stand until bubbling subsides.
3. Rinse thoroughly with high pressure hose and scrub with stiff bristle brush. Rinse again to flush away loose particles.
4. Dry thoroughly before bonding.

PROTECTION AND CLEAN-UP

Wear disposable gloves or barrier skin creams when working with epoxy resins. Never use solvents to remove epoxies from your skin. Some solvents present hazards worse than epoxies and can actually be absorbed into the body. Use a good waterless hand soap and plenty of paper towels to remove epoxy from your skin. Then apply a good medicated skin cream to replace the natural oils removed by the hand soap. If you get gummy, half-cured material on your skin, let it cure and peel it off the next day. Cured epoxy doesn't stick well to skin or hair.

STORAGE

Separate resin and hardener components will have a storage life in excess of one year if containers are kept well closed and stored below 90°F. Allow cold containers to reach room temperature before opening.

PROPERTIES

Mix Ratio by Volume	100:100
Mix Ratio by Weight	100:83
Total Solids	100%

Mixed Viscosity	20,000 cps
Tensile Strength	7,000 psi
Flexural Strength	11,500 psi
Lap-Shear Strength	Polyester Laminate: 2,800 psi Concrete: 1,100 psi Wood (Maple): 1,800 psi Aluminum: 2,000 psi Galvanized Steel: 1,800 psi Copper: 1,650 psi
Lap-Shear Strength vs. Temperature (Aluminum Tensile Shear)	67°F: 2,500 psi 75°F: 2,000 psi 150°F: 1,300 psi 180°F: 1,000 psi
Heat Deflection Temperature	119°F (49°C)
Maximum Service Temperature	160°F (71°C)
Minimum Application Temperature	35°F (2°C)
Gel Time @ 77°F (25°C)	60 Minutes (100g mixture)
Full Cure @ 77°F (25°C)	72 Hours

Coverage

Adhesive Glue Lines Mixed adhesive coverage in square feet per gallon		
Thickness	Softwood	Hardwood
Clamped Joints		
3-4 mils	400	500
Vacuum Bagging		
8 mils	200	200
Stapled Veneer		

20 mils	80	80
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***ALWAYS MIX THOROUGHLY!
IMPROPER MIXING IS THE GREATEST CAUSE OF EPOXY SYSTEMS FAILURE.***

T-88 is a hazardous product. Check the [shipping options](#) page for details on shipping hazardous items. For additional information refer to the T-88 [Safety Data Sheet](#).

PDF Documents

You will need a PDF reader to view these links, you can download Acrobat Reader for free from [Adobe's website](#).

Safety Data Sheets: [Part A](#) and [Part B](#) (both parts are needed, they are separate sheets)

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All products ship within 2 business days from both coasts!

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Tech support is available over weekends and holidays.**