

URAC RESIN 185

Modified Urea Formaldehyde Liquid Adhesive

URAC 185 resin is a modified urea formaldehyde liquid adhesive formulated to give craze resistant glue lines up to 0.02" thick. It may be used for gluing wooden structures where a thin glue line cannot be obtained because of inadequate pressure or irregularly contacting surfaces. It is an ideal "gap filling" adhesive.

DISTINCTIVE PROPERTIES

Craze resistance, low shrinkage —

URAC 185 resin gives excellent bonds in glue line thicknesses up to 0.02".

Bonding temperature —

URAC 185 resin may be cold or hot set at temperatures from 70°F to 125°F.

Low pressure —

URAC 185 resin can be used with hydraulic presses, screw-type presses or hand clamps.

Quality of bond —

URAC 185 resin provides highly moisture resistant bonds meeting the performance requirements for Federal Specification MMM-A-188, Type III.

APPLICATIONS

URAC 185 resin is suitable for the following applications:

Assembly Gluing — Furniture, sporting goods, millwork, joint assemblies, hollow core doors.

Bonding — Decorative laminates to plywood, "Masonite" or lumber cores for dinette, sink, and counter tops.

Lumber Core Binding — Using steam heated automatic core machines, high frequency core gluers and heated clamp carriers.

INSTRUCTIONS FOR USE

URAC 185 resin is formulated for use by the addition of Hardener 185 or Summer Hardener 185-S. These hardeners are light tan powders consisting of inorganic curing agents and a ligneous filler. The use of Summer Hardener 185-S to extend the life of the glue mix is suggested when temperatures exceed 80°F.

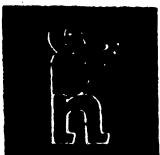
In the formulation of this adhesive, the ratio of filler-to-resin has been carefully worked out. The craze-resistance and low-pressure-bonding properties depend entirely upon this balanced formulation. The thinning of URAC 185 resin with water or other resin is not recommended.

Although this adhesive can be used for some flat panel work where special considerations prevail, it is not intended for general application as a plywood adhesive. Its true field is in gluing of wooden structures where inadequate pressure or irregularity of shape of contacting surfaces make it impossible to attain uniformly thin glue lines.

In many cases, it is feasible to spread URAC 185 resin on mechanical spreaders requiring a consistency similar to conventional urea-formaldehyde resin glues. In many other applications, knife, spatula, or brush spreading are indicated; thick glue lines require an adhesive of heavier consistency to meet job requirements. Within the limits given below, the craze-resistance and quality of bond will not be impaired by variation of consistency.

Table I

Parts by Weight	Consistency		
	Thin	Medium	Thick
URAC 185 resin	100	100	100
Hardener 185	10-13	13-16	16-18



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PROCEDURE FOR MIXING

The resin may be mixed by hand in small quantities, but the use of a standard, double-action mixer is strongly advised. Add the desired quantity of URAC 185 resin to the mixer, start the agitation, and slowly add the desired weighed quantity of Hardener. Continue the agitation until a smooth, lump-free mixture results.

WORKING LIFE

As soon as mixed, the glue is ready for application to the wood. It is now activated and will continue to react until completely set. If quantities of adhesive in excess of a few pounds are to be mixed, it is highly advisable to use water-jacketed mixers. The working life given in the following table is related to the actual temperature of the glue mix and not to room temperature.

Table II — Working Life,

Glue Mix Temperature, °F	Hours
60	8.0
70	4.0
80	2.0
90	1.0

If heat is to be applied to the glue line, it is often advantageous to lengthen the working life by maintaining the glue mix at a temperature of 60°F or lower. The glue should, however, be applied to wood which is at a temperature in excess of 70°F.

PREPARATION OF WOOD

Wood surfaces should be reasonably smooth, free of torn fibers, and clean. Wood for gluing with URAC 185 resin should have a moisture content of 7 per cent minimum and 15 per cent maximum and the humidity in the plant should be high enough to maintain a minimum equilibrium moisture content of 7 per cent.

SPREADING URAC ADHESIVE 185

The glue may be spread by mechanical spreader, brush, spatula, or by any conventional type of applicator, as long as the proper mix is chosen for the method of application. Typical spreads are similar to those used in hot or cold pressing and depending on conditions, usually range from 65 to 80 pounds for 1,000 square feet of double glue line.

ASSEMBLY TIME

The table below indicates the allowable lapse in time between spreading of the resin mix and the application of final pressure in clamping (assembly time). It is most advisable to close the assemblies within the times suggested in the following table to prevent air-drying of the spread glue.

Table III — Assembly Time

Temperature °F*	Minutes
90	10
80	20
70	30

*Temperature of stock and glue

PRESSING

Pressing should be accomplished to provide the minimum possible glue time thickness. Glue lines of over .020" thickness are not recommended.

Pressure should be maintained for the minimum times shown below. Pressing time depends on temperature, humidity, species of wood, and whether the assembly is stressed in clamping, or is seriously stressed in removal from the clamps.

CLAMPING TIME

Table IV — Pressing Time

Temperature, °F	Hours
100	1.5
90	3
80	6
70	12

The times given are the minimum recommended pressing times for flat press work which is not unduly stressed either in clamping or in removal from the clamps. Temperatures are those in the room, but it is assumed that the wood is at room temperature, this being the important factor.

As a guide in the use of elevated temperatures to accelerate the cure of the resin, we have prepared the following table relating cure time with temperature of heated platens. Since heat transfer conditions vary according to the species of wood, the pressure involved, and the type of heating equipment used, the figures should be used only to assist in establishing the minimum safe, pressing time.

PRESSING SCHEDULES

Table V – Depth to Deepest Glue Line

Platen Temperature, °F	1/16"	1/8"
	Minutes	Minutes
225	1.5	3.0
200	2.0	4.5
175	3.5	6.0
150	5.5	9.0
125	9.0	14.0

Conditions: Veneers – 1/16" birch

Pressure: 150 psi

Formulation – 15 parts of Hardener
185 with 100 parts of
URAC 185 resin

Many bonding applications of URAC 185 resin may be accomplished by use of high frequency generators or flexible, rubber heating blankets. High frequency glues provide set in a matter of seconds in applications, such as lumber core gluing, door and panel repair, "spot-gluing" of wall panels, furniture framing, veneer laminations, as in archery bows, etc. Electrically heated, flexible rubber blankets are used extensively in bonding decorative plastic laminates to suitable core materials in a matter of minutes. Recommendations of manufacturers of electric heating devices should be followed. The length of cure time will depend upon the heating equipment used, the glue line depth, and other factors noted earlier.

AGING PERIOD

(For Structural Applications Only)

In order that cold-clamped joint-work may develop its full water resistance and full strength, assemblies should not be exposed to temperatures less than 70°F until five days have elapsed after the gluing operation.

No aging period is necessary following hot pressing to develop full water resistance and joint strength. However, it is desirable to condition flat panels in bales for several days for optimum warp stability.

STORAGE AND STABILITY

URAC 185 resin and Hardener 185 should be stored in their original closed containers.

Steel, enamel, paper or earthenware containers are recommended for handling small quantities in the shop.

Spreaders and brushes should be cleaned immediately after use with water at 70°F to 125°F.

Useful life of URAC 185 resin also depends upon the temperature to which it is exposed:

Temperature	Useful Life
60°F	12 months
75°F	6 months
90°F	3 months