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RESOBOND A3

Resobond A3 is a, resorcinol formaldehyde resin which, when mixed with hardener P4 and properly cured, forms a weatherproof and boil proof bond. Resobond A3 is suitable for applications such as timber laminating and finger jointing where a durable, exterior grade structural bond is required. Both the liquid resin and powder hardener, have a shelf life in excess of two years if stored in a sealed container in a cool environment.

Mixing:

Mix Ratio	Resobond A3	100 parts by weight
	Resobond P4	25 parts by weight

Add the hardener to the resin with constant stirring. Continue to stir until the mixture is of even consistency and free of any lumps. Avoid contact with skin or inhalation of vapour from both the resin and hardener.

Pot Life:

The pot life of the mixed adhesive varies with the temperature as shown below:

Ambient Temperature	15°C	20°C	25°C	30°C	35°C
Pot Life	6hrs	3½hrs	2¼hrs	1½hrs	¾hr

Moisture Content:

The moisture content of timber should be in the range of 8% to 15%. Adjacent laminations should not vary by more than 2% and maximum variation of all laminations should be less than 4%. For optimum results the moisture content should be in the following range:

Softwoods	8% - 12%
Hardwoods	8% - 10%

Preheating:

In cold environments it may be advantageous to preheat the timber to a temperature of 18-22°C. Heating above this temperature range can lead to problems if assembly times are long.

Surface Preparation:

The laminate must be accurately machined. The surface must be clean and the grain open to allow easy penetration of the glue. The freshly planed surface will deteriorate with age, this occurs more rapidly with hardwoods. Consequently, the time between machining and spreading the glue should be kept to a minimum. Ideally the planer should be in line with the glue spreader so that glue is spread on seconds after planing.

Application:

The glue should be applied at the rate of at least 250gm/m² (25kg/100m²) to each of the surfaces being glued (double glue line). Heavier spreads can be used to overcome glue-line starvation.

Open Assembly Time:

The open assembly time is affected by a number of factors including air temperature, relative humidity, timber temperature, air movement across the glue and glue spread. As these factors change they can increase the rate at which glue is drying out, the open assembly time must be reduced accordingly. Under mild ambient conditions (25°C, 60% R.H.) the open assembly time should be less than five minutes.

Closed Assembly Time:

The closed assembly time must be long enough to allow glue penetration into the timber but not so long that glue-line starvation or pre-cure occurs. Under most conditions the minimum closed assembly time is five minutes. The maximum closed assembly time at various temperatures is shown below.

Ambient Temperature	15°C	20°C	25°C	30°C	35°C
	3hrs	2½hrs	1½hrs	¾hr	½hr

Pressure:

The pressure required is shown below:

Softwoods	700 – 1000kPa
Hardwoods	800 – 1200kPa

With presses, which do not take up any movement (eg: screw presses) it is necessary to re-tension 20 minutes after locking up the press.

Pressing Time and Temperature:

The glue must be cured at a temperature above 20°C and for optimum results, the following glue-line temperatures should be attained.

Softwoods	30°C
Hardwoods	40°C

It is essential the heat is applied as soon after clamping as possible. The pressing time required at various temperatures is as below:

Temperature	30°C	40°C	50°C
Pressing Time	8hrs	5hrs	3hrs

After removing from the press, stack the glued material to maintain heat or store in a warm environment.

Clean Up:

The uncured glue can be removed by washing with water.

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