Technical Data Sheet

One-component urea powder adhesive

Use

One-component urea powder adhesive, which only requires mixing with water to make it ready for use. It is suitable both for industrial use as well as for smaller bonding operations. It is especially suitable for joinery, cabinetwork and assembly gluing, particularly when small amounts of glue mix are needed, or when demand is such that the use of a liquid adhesive is uneconomic.

Bonds obtained are of durability class C3 according to EN12765.

The setting time is fast, but will allow adequate working life for most envisaged applications using hot and cold pressing techniques.

Technical Data

Appearance	White, free flowing powder
Viscosity (2:1 solution, 25°C)	1800 – 3800 mPas

Storage

Should be stored in the original packaging, in a cool dry place (ideally 5 – 25°C). The adhesive should be protected against humidity and direct sun light. Sacks which have already been opened must be carefully closed prior to further prolonged storage. Shelf life under these conditions is at least 6 months.

Glue Mix Preparation

Mix powder adhesive with water as follows:

	Parts by Weight	Parts by Volume
One Shot Resin	2.0	3.1
Water	1.0	1.0

Use a dry, preferably non-metallic container, and add water to the powder gradually, stirring to ensure the powder is evenly mixed. Continue to stir until the solution is free from lumps. The mixed adhesive is ready for use. To ensure that a consistent glue mix with the correct properties is obtained, mixing by weight is strongly recommended. Addition of too much water will seriously reduce the rate of setting and the gluing properties, particularly at low temperatures.

Pot Life

The pot life at different temperatures is given in the table below.

Temperature (°C)	10	15	20	25	30
Pot Life (hours)	2½	1¾	¾	½	¼

Glue Spread

Apply glue mix thinly to one surface, then assemble the joint and apply full clamping pressure. If only light clamping pressure is used, the glue mixture should be applied to both surfaces to be joined.

Normally the adhesive spread is in the range of 100 – 400g/m^2.

Assembly Time

The joints should be assembled whilst the glue line is still moist and good contact can be assured. The clamping pressure should be applied as soon as possible after assembly, especially at higher temperatures.

Pressure

The pressure is first of all determined by the density, surface evenness and thickness tolerance of the adherends and the assembly time. Glue being squeezed out of the glue line when pressure is applied is an indication of sufficient pressure.

Normal pressure is 0.3 – 1.0N/mm^2 (3 – 10kg/cm^2), depending on the type of bonding operation and the material to be bonded.

Pressing Times

Should not be used at temperatures below 10°C. Minimum wood temperature is also 10°C. The table below gives the minimum time for application of pressure at temperatures between 10 and 35°C.

Temperature (°C)	10	15	20	25	30	35
Pressing Time (hours)	8	4	1½	1	½	⅓

If the joint is liable to be strained immediately after removal of the pressure, the above times should be increased. Will continue to gain strength after pressing. The full strength and final water resistance properties are obtained a few days after pressing.

The basic setting times for hot bonding at different temperatures are given in the table below.

Temperature (°C)	50	60	70	80	90	100
Pressing Time (minutes)	6	3½	1¾	1	¾	⅔

The pressing times (basic setting times) stated refer to glue line temperatures only and allowance must be made for the heat to travel from the press platen. Heat penetration time will vary according to the density and moisture content of the wood and the distance to the furthest glue line. The table below is a guide to the additional time required for low and medium density timbers.

Press Temperature (°C)	Additional time per mm distance to the furthest glue line (minutes)
50 – 60	3
70 – 80	2
90 – 100	1

The pressing time must be considerably extended when bonding wood materials with high density and/or low absorbency.

Because so many variations in local production conditions affect the pressing time, it is recommended to establish the correct pressing time by conducting trials.

Wood Materials

The surfaces must be free from oil, fat, dust or other deposits. Gives the highest bond strength when the moisture content of the wood is between 6 – 15%. Acceptable bond strength can even be obtained at higher moisture content, but high moisture content increases the risk of over-penetration of the glue into the veneer (bleed-through), and greater formaldehyde emission.

Wood that has been stored in an unheated shed or workshop may be cold and contain excessive moisture. This can result in poor bonding. It is therefore good practice to store the wood in reasonably warm and dry conditions for several days prior to gluing.

Cleaning

Mixer and spreader equipment must be cleaned before the glue has set. Cleaning is most easily done with warm water (40 – 60°C). Once the glue has set it is insoluble and must be scraped off.

Glue remainders and untreated wash water present a pollution risk if allowed to enter public drains or watercourses and should be handled accordingly. Advice on how to dispose of glue waste is given in our Technical Information Leaflet No. 2E, “Glue waste disposal – Pollution prevention”, which is available on request.

Safety Precautions

Reference is made to the Safety Data Sheet.

When handling the adhesive powder and the glue mix it is recommended that certain precautions normally taken when handling chemicals is observed. Skin contact with the uncured glue should be avoided, since people with particularly sensitive skin may be affected. It is recommended to wear protective gloves. Likewise, eye protection should be worn where there is a risk of splashes. Hands and forearms should be thoroughly washed with soap and warm water at the end of the working day.

Adequate ventilation of the workshops should be maintained.

Caution

Adhesives and hardeners are generally quite harmless to handle provided that certain precautions normally taken when handling chemicals are observed. The uncured materials must not, for instance, be allowed to come into contact with foodstuffs or food utensils, and measures should be taken to prevent the uncured materials from coming into contact with the skin, since people with particularly sensitive skin may be affected. The wearing of impervious rubber or plastic gloves will normally be necessary; likewise the use of eye protection. The skin should be thoroughly cleansed at the end of each working period by washing with soap and warm water. The use of solvents is to be avoided. Disposable paper – non cloth – towels should be used to dry the skin. Adequate ventilation of the working area is recommended. These precautions are described in greater detail in Material Safety Data sheets for the individual product. These are available on request and should be referred to for fuller information.

The suggestions given in these notes are based on data gained from experience and tests. However, since operating conditions in the user's plant is beyond our control, we cannot assume responsibility for any risks or liabilities, which may result from the use of our products.. PdW 12.2014