

Technical Data Sheet

Aerolite UP 4366

One-component urea powder adhesive

Use

Aerolite UP 4366 is a 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 is needed or when demand is such that the use of a liquid adhesive is uneconomic.

Bonds obtained with Aerolite UP 4366 are of durability class C3 after EN 12765.

Aerolite UP 4366 is suitable for both hot and cold pressing techniques.

Technical data

Appearance	White, free flowing powder
Viscosity in 2:1 solution at 25°C	3000 - 8000 mPas

Containers

Standard export sacks, each 25 kg (55 lbs) net. The sacks can be delivered on pallets covered by shrinkable polythene.

Storage

Aerolite UP 4366 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 been opened, must be carefully closed before prolonged storage. Shelf life under these conditions is at least 6 months.

Glue mix preparation

Mix Aerolite UP 4366 powder adhesive with water as follows:

	Parts by weight	Parts by volume
Aerolite UP 4366	2,0	3,3
Water	1,0	1,0

Use a dry container, preferably non-metallic 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 lower temperatures.

Pot life

The pot life of Aerolite UP 4366 at different temperatures is given in the table below.

Temperature, °C	10	15	20	25	30
Pot life, hours	7,5 h	5	3	2	1

Glue spread

Apply the 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 – 400 g/m².

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 the pressure is applied, is an indication of sufficient pressure.

Normal pressure is 0,3-1,0 N/mm² (3-10 kg/cm²), depending on the type of bonding operation and the materials to be bonded.

Pressing times

Aerolite UP 4366 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, hrs	14	10	7	4	1 ½	1

If the joint is liable to be strained immediately after removal of the pressure the above times should be increased. Aerolite UP 4366 will continue to gain strength also after pressing. The full strength and the final water resistance properties are obtained a few days after pressing.

The basic setting times of Aerolite UP 4366 for hot pressing at different temperatures are given in the table below.

Temperature, °C	50	60	70	80	90	100
Pressing time, min	40	16	8	3 ½	2	1 ½

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 farthest glue line. The table below is a guide to the additional time required for low and medium density timbers:

Press temperature	Additional time per mm distance to the farthest glue line
50-60°C	3 minutes
70-80°C	2 minutes
90-100°C	1 minute

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

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

Wood materials

The surfaces must be free from oil, fat, dust or other deposits. Aerolite UP 4366 gives the highest bond strength when the moisture content of the wood

is 6-15%. Acceptable bond strength can even be obtained at higher moisture content, but high moisture content increases the risk of overpenetration of the glue into the veneer (bleed-through) and greater formaldehyde emission.

Wood that has been stored in unheated shed or workshops may be cold and contain excessive moisture; this can cause poor bonding. It is therefore good practise to store the wood in reasonably warm and dry conditions for several days before gluing.

To avoid wetting difficulties that may arise through case-hardening it is good practice to sand plywood before gluing even though it may appear to have been sanded at manufacture

Cleaning

Mixer and spreading equipment must be cleaned before the glue has set. Cleaning is most easily done with warm water. 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 for Aerolite UP 4366.

When handling the adhesive powder and the glue mix of the powder adhesive 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 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.

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.

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