# Technical Data Sheet

Telephone: +44 (0)1352 757657
Telefax: +44 (0)1352 758914
Email: sales@tsresins.co.uk

# Aerolite 306 with Hardeners Prefere 5325X and Prefere 5326X

Powder urea adhesive

## Use

Used with liquid hardener Prefere 5325X or Prefere 5326X by the separate application method, Aerolite 306 provides a gap-filling, water resistant adhesive which is highly resistant to moulds, fungi etc.

Aerolite 306 requires mixing with water before use but the as-supplied powder has considerably longer storage life than the equivalent liquid resin.

Aerolite 306 with Prefere 5325X or Prefere 5326X conforms to BS 1204:Part 1 (Type MR), also to Part 2 (Type MR) since this is included in the requirements of Part 1. It also conforms to BSEN 12765 (Class 3).

## Instructions For Use

### Choice of hardeners

Choice of hardener depends on the prevailing temperature and on the user's preference in regard to the assembly and clamping times given below. In cold conditions the faster hardener should be used. Temperature in the glue-line should be at least:

10°C using Hardener Prefere 5326X
15°C using Hardener Prefere 5325X

### Mixture

Mix Aerolite 306 powder resin with water as follows:

| | Parts by weight | Parts by volume |
|---|---|---|
| Aerolite 306 | 2 | 4 |
| Water | 1 | 1 |

**Note**: These are approximate values. Where the resin is required to have limited flow, e.g. on vertical surfaces or for filling gaps, less water is preferable (45 parts of water to 100 parts by weight of Aerolite 306).

Use a dry container (preferably non-metallic) and add the water to the powder gradually, stirring to ensure the powder is evenly dispersed. Continue to stir until the resin solution is free from lumps. The powder dissolves more readily if warm water (20-35°C) is used. Before application it is good practice to let the solution stand to allow dispersal of bubbles.

## Preparation of Materials for Bonding

### Surface Preparation

Thoroughly sand the surfaces to be joined. Ensure that all surfaces are free from dust or other deposits.

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

### Moisture Content

For best results with Aerolite 306, the moisture content of the surfaces to be bonded should be within the range 7-13%, but when pressing at temperatures above 105°C moisture content should not exceed 10%. Variation between the adjacent surfaces should not be greater than 3% moisture content.

## Application

To make application easier, resin and hardener may be transferred to small plastic or glass containers – not metal containers*. Aerolite 306 and hardener are applied by the following method:

1. Spread the resin, by means of a conventional glue spreader, wooden rod or clean brush*, on one of the surfaces to be joined. Leave until tacky.
2. Apply the hardener to the other surface, using a clean brush*, felt pad, sponge or similar iron-free applicator*.
3. Bring the surfaces together while the hardener-coated surface is still moist and maintain firm contact by any convenient method until the glue has set.

*See notes on avoidance of iron contamination

### Spread Rates

The quantity of resin and hardener required for most joinery applications can be determined only by workshop tests but when gluing to flat surfaces the following figures may be taken as a guide:

| | |
|---|---|
| Aerolite 306 resin solution | 200 - 400 grams per square metre. |
| Powder resin content of the solution | 140 - 275 grams per square metre |
| Hardener Prefere 5325/6X | 100 -150 grams per square metre. |

## Assembly times (see table 1)

From the moment at which contact is first made between the resin-coated and hardener-coated surfaces, the joint components must be assembled and firmly positioned within the times given in table 1.

## Pressing or clamping times

### Clamping times (see table 2)

The minimum periods during which the surfaces must be held in contact are given in table 2.

The times given in table 2 should be at least doubled if the joint will be strained soon after removal of pressure – e.g. when making laminated bends,. At the end of the clamping periods, joints are sufficiently strong to withstand careful handling – but full strength and water resistance are not attained until several days later. The rate at which the glue-line matures to its ultimate strength greatly depends on the ambient temperature. Because of this, destructive testing of glued joints should be deferred about 14 days.

## Cleaning equipment

Mixers, spreaders, etc. should be cleaned by washing with warm water. The addition of isopropyl alcohol to the water will help to remove persistent residue. Equipment should be cleaned before the glue has time to set.

**Note:** isopropyl alcohol and its vapours are highly flammable. Due precautions must be taken against all possible fire risks.

## Notes

### Contact between hardener and resin

Except where it is part of the prescribed gluing process, contact between hardener and resin must be carefully avoided. For example, if the applicator used to spread the hardener is dipped into the resin solution container, the resin immediately starts to thicken and set and become useless.

### Avoidance of iron contamination

Care should be taken to avoid contact of resin or hardener with nails, etc., or with ferrous fitments (for example, on brushes or containers), since this can lead to staining on timber. Staining is caused by the formation – under acid conditions – of iron-tannin compounds (especially on woods with high tannin content, such as oak or ash).

Accidental discoloration due, for example, to squeeze-out of the adhesive against a G-clamp – may be removed by wiping the affected area with an absorbent pad moistened with 10% citric acid solution.

Since citric acid may itself cause colour changes in certain types of wood, it is advisable first to test its effect on an off-cut.

## Storage

Aerolite 306 and hardeners should be stored firmly sealed in their original container in a cool (5°C – 15°C ) dry place. Shelf life under these conditions is at least 1 year for Aerolite 306 and at least 3 years for the hardeners.

## Table 1 – Assembly times

| Hardener | Glue-line Temperature | | | | |
|---|---|---|---|---|---|
| | 10°C | 15°C | 20°C | 25°C | 30°C |
| Prefere 5326X | 30 min | 20 min | 10 min | 5 min | --- |
| Prefere 5325X | --- | 25 min | 15 min | 10 min | 5 min |

## Table 2 – Clamping times

| Hardener | Glue-line Temperature | | | | |
|---|---|---|---|---|---|
| | 10°C | 15°C | 20°C | 25°C | 30°C |
| Prefere 5326X | 5-6 hrs | 2¾ hrs | 1¾ hrs | 1¼ hrs | 1 hr |
| Prefere 5325X | --- | 3½ hrs | 2¼ hrs | 1½ hrs | 1¼ hrs |

High density woods and panel products such as MDF and moisture resistant particleboard may require longer pressing times due to their higher heat capacity and slower rate of water absorption. All pressing times should be used as a guide and not taken as a specification.

## Caution

TS Resins 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.



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