Factory method statement - translucent finishes

Application guidelines

The following information provides an overview of the application of factory applied opaque finishes to manufactured joinery items such as windows, doors and conservatories. It has been designed to help manufacturers adopt good working practices in their manufacturing and coating process, ensuring service life is maximised. This information must be used in conjunction with the relevant coating specification and product technical data sheets. Additional, more detailed information sheets are also available.

Basic considerations

Design

- Cills and non vertical surfaces must give efficient water shedding, with a slope angle no less than 9°.
- Surface tension causes wet paint to flow away from sharp edges leaving them relatively unprotected. A minimum radius no less than 3mm is required to avoid thinning of the coating system in accordance with British Standard 644.
- Interior edges should be rounded to at least l. 5mm radius.
- The design must preclude obvious water traps. Any gaps or recesses in the joinery should be sufficiently wide to prevent capillary draw of water into holding areas, we typically recommend a 3mm gap.
- Fixing pins, particularly on horizontal glazing beads, must not allow the ingress of water. If pins are punched below the surface, filling must be carried out to ensure that a water collecting hollow is not produced. Secondary filling may be necessary to account for shrinkage.
- As a minimum, the construction guidelines set out in BS 644 should be followed at all times.

Timber quality

Timber grade used in manufacturing must be selected to take into account its natural durability and use classification for the proposed exposure conditions. See: BS EN 350; BS EN 335.

Preservation treatment

- Where the natural durability of the timber does not meet the class requirements as determined by BS EN 335-2 it must be treated with a preservative in conformance with BS EN 599-1.

If the timber is preservative treated using double vacuum impregnation, particularly with solvent based material, the manufacturer's recommended drying times must be followed before coating. Typically, under good ventillation conditions, these can vary from 2 to 14 days.

- When using **TEKNOL AQUA 1410** or **AQUAPRIMER 2907** wood preservative as part of the coating finishing process, joinery must be factory coated to a minimum dry film thickness of 80µ before site exposure in compliance with BS EN 599-1

Moisture content

Moisture content of the timber at the time of coating is between 12% - 16%.

Sanding

- Sanding is commonly used for small scale, purposemade, joinery. Finishing results can be greatly improved by minimising sanding and denibbing and selecting the appropriate grade of abrasive paper.
- This is very important if automatic drum sanders are used. The grit of the belt on the first drum should be as fine as possible to prevent the substrate being ripped open, ideally 120, with subsequent belt grades coordinated to close the surface and the finishing belt 220 or 240 grit.

Fillers

- The filling of defects can be difficult when using translucent finishes. It is important to ensure that the colour of any filler used should be as close as possible to the colour of the base coated timber and not the original timber colour.
- Some hard wax fillers are suitable for use with Teknos products although we do not recommend the use of soft wax fillers on external joinery due to the extremes of temperature that can occur.

Degreasing

- All surfaces should be clean, dry, and free of dust, salt, grease, and other contaminants. See ISO 12944, part 4.
- Timbers that contain natural oils and chemicals, such as teak, iroko, oak and cedar should be thoroughly degreased with **TEKNOSOLV 7012** immediately prior to coating. Failure to degrease will impede drying and coating adhesion.

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Environmental & storage conditions

All coating products must be kept away from frost, cold draughts, and ideally be stored at a constant temperature above 10°C. Containers should never be stored on the workshop floor, which can become very cold in winter, instead they should be stored on pallets. Coatings may be applied to surfaces between 5°C and 30°C and at humidity levels below 80%, but it is desirable to avoid the extremes. Factory conditions in the spray area should ideally be between 15°C - 25°C with humidity levels between 45% - 70%. Temperatures and humidity levels outside these parameters will impact on the coatings ability to dry and cure and may detract from the appearance and long term performance. Drying areas must be kept dust free, and kept at a steady temperature of 15°C - 25°C. Avoid switching off heating overnight, particularly in winter. With waterborne coatings drying is greatly improved if a steady air flow (1-1.5m³/min) is maintained over the face of the coated joinery. This can be achieved with overhead conservatory fans. It is also important to replace the damp air with fresh dry air - we recommend one to two air changes per hour. When painting, surface temperatures must be at least 3°C above the dew point to prevent moisture condensation during the drying process.



Prepainting treatment

After applying the base stain, any exposed end grain on the timber components must be sealed using two brush coats of **TEKNOSEAL 4000.** The product is supplied ready to use and should not be thinned. Re-seal containers after use to prevent evaporation and skinning.

Teknoseal 4000

Application

For optimum performance two generous brush coats must be applied to all areas of exposed end grain. Vulnerable areas, such as door stiles, projecting cills and cut glazing beads require special attention. For areas of severe exposure (e.g.coastal locations) application of an additional coat is recommended.

Drying time @ 23˚C/60% RH

Touch dry after 30 minutes
Recoatable after one to two hours



TEKNOSEAL 4000 applied by brush to exposed end grain prior to factory finishing.

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Paint products

This section gives a general description of a typical Teknos translucent coating system. It should be read together with the detailed specification and technical data sheets for your particular application.

Preservatives	
TEKNOL AQUA 1410	Preservative for dip and flow coat application.
AQUAPRIMER 2907	Combined primer/preservative for dip and flow coat application.
Base stain	
AQUAPRIMER 2900 base stain	General purpose spray, dip and flow coat primers for a variety of substrates.
Topcoats	
AQUATOP 2600 topcoat	Microporous topcoat
Ancillary products	
Teknos **V JOINT SEALER**	V joint sealer adhesive/sealant
TEKNOSEAL 4000	End grain sealer

Application set up

In the UK, top coat is most commonly applied by air assisted airless spray, preservatives and base stains by dip or flow coater. Typical set up parameters are shown below.

Air assisted airless spray

- **Tip size:** 11 or 13 thou
- **Spray fan angle:** 20˚ or 40˚ dependant on item coated
- **Application pressure:** 1500 psi
- **Conrol air pressure:** 25-30 psi
- **Typical wet film thickness:** 150-175 µ

Dip or flow coat

- Base stains are supplied ready for use.
- After dipping or flow coating, the hanging angle should be more than 20˚ to ensure clean run off of the product. Monitor the run off to enure any product traps are removed.



- Keep the product away from direct air movement for 15 mintes to allow for flow out and an even film build to be achieved.

Applying AQUAPRIMER base stain by spray

- If the base stain is spray applied, it is important to thoroughly stir the product, apply an even thin coat, then wipe the joinery down to remove any excess material to prevent build up and runs which will leave dark lines on the joinery item.

- Using a 9 or 11 thou tip, dropping the application pressure to 1000 psi, and increasing the control air pressure to 35-40 psi will help to 'soften' the spray fan and improve finish uniformity.

Equipment cleaning

Application equipment can normally be cleaned using cold water. Under certain circumstances it may be advantageous to use warm soapy water. Please refer to our cleaning procedure data sheet.

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Paint application

This section describes a typical coating sequence and should be read in conjunction with your specification which is tailored to your own application conditions. Additional informations sheets are available covering issues such as drying paramerters, treatment of knots and end grain, treatment of knots and end grain, moisture content and machining tolerances, winter painting, site care and storage, dip and flow coat management, surface preparation, and joinery design and installation. Your local service engineer will be happy to provide copies.

Coat 1: priming & preservation

Products	**TEKNOL AQUA 1410**, **AQUAPRIMER 2907**, **AQUAPRIMER 2900** dip or spray primer, **ANTISTAIN AQUA 2901** primer.
Product preparation	All spray products are supplied ready for use; stir thoroughly before application. For flow coater and dip application, the viscosity of the product should be adjusted and maintained in line with individual product technical data sheets.
Application	Using air assisted airless spray equipment apply an even coat of primer in the correct colour shade to all surfaces, or dip/flow coat in line with Teknos data sheet guidelines.
Drying time @ 23˚C/60% RH	Touch dry after 30 minutes. Recoatable after three to four hours.

Coat 2: mid coat

Products	**ANTISTAIN AQUA 2901** primer; **AQUATOP 2600** topcoat
Product preparation	All spray products are supplied ready for use; stir thoroughly before application.
Application	Using air assisted airless spray equipment apply an even coat of mid coat or top coat in the correct colour shade to all surfaces. The wet film thickness should be between 150 and 175µm with no over coating on corners or joints with adjacent components.
Drying time @ 23˚C/60% RH	Touch dry after one to two hours. Recoatable after two to four hours
Denibbing	Denib all surfaces to remove any raised fibres using a fine grade abrasive between 180 and 220 grit. Nylon and foam filled denibbing pads are very useful for denibbing, particularly on mouldings and profiled sections. The fine grit efficiently removes protruding fibres while discouraging over sanding and the removal of coating from edges.
Surface check	Check all surfaces for any defects and fill with **TEKNOFILL 5001** as required. Ensure all residual dust is removed from the surface of the joinery items.
Seal construction joints	Apply a continuous bead of Teknos **V JOINT SEALER** to the width of the joint and smooth with a damp ponge, cloth or squeegee, to ensure good penetration and levelling in the joint. Alternatively, apply an adhesive generously to all surfaces to be bonded, using light pressure to form the joints and excess adhesive to seal any exposed end grain and construction joint. This can also be used to cap all lower internal joints in mid and bottom rail rebates. Both products can be topcoated after one to two hours with an **AQUATOP 2600** finish.

Coat 3: top coat

Products	**AQUATOP 2600** topcoat
Product preparation	Products supplied ready for use but stir thoroughly before application.
Application	Using air assisted airless spray equipment to apply an even coat of topcoat in the correct colour shade to all surfaces. The wet film thickness should be between 150 and 175µm with no over coating on corners or joints with adjacent components.
Drying time @ 23˚C/60% RH	Touch dry after one to two hours. Dry after two to four hours

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