FACTORY METHOD STATEMENT

At Anker Stuy, we want work together with you to help achieve the best possible results in your factory. Our paints provide the perfect finishing touches to your products, highlighting your craftmanship and providing you with a coating that protects the wood and maintains its colour year on year. The following information is designed with this partnership in mind, to ensure joinery manufacturers achieve quality coating results every time.

This information can be used in combination with
our specifications, technical data sheets and safety data sheets
(available on product pages at www.ankerstuyshop.co.uk).

anker stuy coatings

General points of attention:

- The timber must be at a suitable moisture content prior to machining and application of the coatings. We recommend that the moisture content is between 12% and 16% for regular timber, and less than 8% for Accoya.
- The timber should be free from micro-organisms, such as insects, fungi, blue stain, mould or bacteria and natural defects such as knots and shakes must be removed or repaired to a suitable standard prior to coating. Advice on acceptable timber grades can be found by referring to the latest EN 942 standard.
- Fine capillary gaps where moisture can become trapped need to be avoided as these can allow uncontrolled moisture ingress, resulting in possible coatings issues and potential wood rot.
- All edges (arises) should be rounded to a radius of 3mm as recommended by the British standard. All sill extensions must have a maximum protrusion of 75mm and machined at an angle that promotes good water-shedding.
- All glazing should be of a high standard, where the glazing sealant or gasket forms a water-tight contact with the glass and timber. This should also have a sufficient angle to shed water away from glazing lines. Internally beaded systems are preferable. Where external beading is used it should be constructed from highly stable timber or use wood-plastic composite beading material. We recommend that glazing systems should be drained and vented to reduce the risk of condensation. Before selecting a glazing sealant, please check that it adheres properly to the topcoat used.
- Joint adhesive must be applied to all parts of the joints and there must be no gap where moisture ingress can occur. Adhesives with good gap filling qualities are highly recommended. These need to be flexible enough to cope with the natural movement characteristics of the timber. Where a fully filled joint is not achievable the adhesive must conform to the minimum D4 specification as described in BS EN 204.
- As a minimum, the construction guidelines set out in BS 644 should be followed at all times.

Surface preparation

The substrate should be prepared by either a suitably planed, or where this is not effective to provide a smooth finish for subsequent coatings, then we recommend that the surface is sanded with abrasives between P120 and P180. Ensure the substrate is clean, dry and free from dust, dirt, grease, silicone and wax. Scrape off and remove residual contaminants by cleaning with warm water and detergent. Use a scraper to remove dirt and mortar splashes. Never sand back dirt and contaminants on timber as this will push them into the surface.

Filling of gaps, defects and v-joints

Small gaps and cracks with a width up to 2mm can be filled with 19-0257 Ankolux Woodfiller. This filler can be applied prior to the application of any coating or in between coats. Due to its white colouration, this is not suitable for translucent coatings.

Use of timber with cracks, gaps or other defects larger than 2 mm is not preferred for joinery facing the weather. If repairs of larger defects is necessary, a 2-pack filler is preferred which has sufficient flexibility to follow the dimensional movement of the timber. Regular filling putties are not suitable for this purpose.

V-joints that have a small amount of exposed end-grain require sealing. It is also likely that there will be a small amount of movement on these joints that can expose the inside joint of the timber. To seal the end-grain and to ensure that the sealant remains intact after small movement, a flexible sealant material is required. We recommend using our 25-0353 Hydrolux V-joint sealer. As well as v-joints, this can be applied to other joints between two sections where a very small gap is present. This is to avoid capillary moisture uptake in the joints. Our v-joint sealer is however unsuitable to cope with larger degrees of movement. In these cases, such as junctions between a bottom rail and the sill, we would recommend using something such as the Frencken 0819 SLS adhesive.

Hydrolux V-Joint Sealer can be applied prior to the application of any coating or in between coats. To ensure a smooth finish sanding with 100P to 120P grit sanding paper prior to application of Hydrolux V-Joint Sealer is recommended. Hydrolux V-Joint Sealer is colourless (also when exposed to moisture) and hence suitable for translucent and opaque systems.

Joint protection

Joints in timber windows and doors require special attention to avoid any capillary water-uptake into the joints and subsequent uptake of water into the end grains of the timber inside the joint.

Traditional white wood glues (including those specified for external use) have limitations in protecting the timber from capillary water-uptake into the joint, due to their non-filling nature. For the sections of the joint not in direct contact with adverse effects of the weather, traditional wood glues can be used, provided that the according to EN 204 category D4 are met. Glue lines that are in direct contact with effects of weather, or in other words external parts of the joints, are best glued with 99-000 Frencken 0819 SLS Window Frame Adhesive. This also applies to flush joints.

This adhesive is gap filling and does not shrink when dried. It can be applied direct;y from the cartridge with a suitable gun. Excess material can be removed with 99-100 Frencken Cleaning Wipes and 99-200 Frencken Stripping spray. Frencken 0819 SLS Window Frame Adhesive can be overcoated with any Hydrolux product between 0.5 and 24 hours of application. If time between applying the glue and coating is longer than this, the glue should be overcoated with a thin coat of 25-0352 Hydrolux End grain Sealer prior to spray painting.

Frencken 0819 SLS Window Frame Adhesive is also very suitable to glue weatherboards and cassettes on doors, as well as to seal gaps between glazing beads and plant-on bars.

End-grain protection

End-grain sections on joinery, where the cut end is exposed, are hundreds and sometimes thousands of times more absorbent to moisture uptake than the other parts of the joinery section. These are by far the most vulnerable areas of the joinery item. Spray coatings can be applied to these areas, but to get better penetration into these often rough surfaces, it is necessary to brush the coating into the end-grain.

25-0352 Hydrolux End grain Sealer should be applied on any end-grain. For hardwoods one coat of end grain sealer will be sufficient, for softwoods and Accoya, two coats of Hydrolux end-grain sealer is required. Hydrolux End grain Sealer can both be applied onto bare timber are well as after the first spray or flowcoat primer.

Typical sections that include end-grains of timber are:

- Outer corners of windows frames, sashes and doors
- End of glazing beads (if these are cut to length after coating application end grain sealer must be applied prior to assembly)
- Ends of weatherboards and bottom sections of doors
- Ends of cladding boards
- All edges or profiles on wooden panels.

Paint storage

Please make sure that paint products are frost free and above 5°C. Ideally paints should 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. Please put containers in racks or on pallets. Before use make sure the temperature of the paint itself is above 15°C. Paint that is too cold will not have good levelling.

Paint application

Application possibilities of various products are listed in the table below:

Application possibilities

Product	Airless	Air-assisted airless	Flowcoat	Dipping	Pot-gun / HVLP	Brushing/ rolling
17-0699 Hydrolux Impregnation	Yes, with small nozzle	Yes, with small nozzle	No	No	Yes	Yes, by brush only
17-0549 Hydrolux Flowcoat	Yes, with small nozzle	Yes, with small nozzle	Yes	No	Yes	No
17-0537 Hydrolux Isoprimer	Yes	Yes	No	No	Yes, if diluted by 20 %	Yes, with brush additive
17-0540 Hydrolux Filling Primer	Yes	Yes	No	No	Yes, if diluted by 20 %	Yes, with brush additive
17-0535 Hydrolux Basecoat	Yes	Yes	No	No	Yes, if diluted by 20 %	Yes, with brush additive
17-0648 Hydrolux topcoat thix SM	Yes	Yes	No	No	No	No
17-0649 Hydrolux Topcoat thix SG	Yes	Yes	No	No	No	No
17-0650 Hydrolux Topcoat Thix GL	Yes	Yes	No	No	No	No
17-0706 Hydrolux Transparant SM	Yes	Yes	No	No	No	No
17-0707 Hydrolux Transparant SG	Yes	Yes	No	No	No	No
17-0708 Hydrolux Transparant GL	Yes	Yes	No	No	No	No
11-0141 Hydrotop SM	No	No	No	No	Yes	Yes
11-0140 Hydrotop SG	No	No	No	No	Yes	Yes
11-0139 Hydrotop GL	No	No	No	No	Yes	Yes
17-0675 Ankolux Impregnation Primer	Yes, with small nozzle	Yes, with small nozzle	Yes	Yes	Yes	Yes
17-0678 Ankolux Aqua Iso Primer	Yes	Yes	Yes	Yes	Yes	Yes
17-0694 Woodcoat TP	Yes	Yes	No	No	Yes	Yes
Acryl primer	Yes	Yes	No	No	Yes, if diluted by 20 %	Yes, roller preferred
Interior topcoat	Yes	Yes	No	No	Yes	Yes

Spray settings for (air-assisted) airless spraying

Product	Airless	Air-assisted airless	Materials pressure (bar)	Support air pressure (bar)	Nozzle size 1/1000 inch	Nozzle angle
17-0699 Hydrolux Impregnation	Yes, with small nozzle	Yes, with small nozzle	50-70	Off	0.007-0.010	10-30
17-0549 Hydrolux Flowcoat	Yes, with small nozzle	Yes, with small nozzle	50-70	Off	0.009-0.012	10-30
17-0537 Hydrolux Isoprimer	Yes	Yes	90-120	0.5-2	0.012-0.016	30-60
17-0540 Hydrolux Filling Primer	Yes	Yes	90-120	0.5-2	0.012-0.016	30-60
17-0535 Hydrolux Basecoat	Yes	Yes		0.5-2	0.012-0.016	30-60
17-0648 Hydrolux topcoat thix SM	Yes	Yes	90-150	0.5-1.5	0.010-0.014	30-60
17-0649 Hydrolux Topcoat thix SG	Yes	Yes	90-150	0.5-1.5	0.010-0.014	30-60
17-0650 Hydrolux Topcoat Thix GL	Yes	Yes	90-150	0.5-1.5	0.010-0.014	30-60
17-0706 Hydrolux Transparant SM	Yes	Yes	90-150	0.5-1.5	0.010-0.014	30-60
17-0707 Hydrolux Transparant SG	Yes	Yes	90-150	0.5-1.5	0.010-0.014	30-60
17-0708 Hydrolux Transparant GL	Yes	Yes	90-150	0.5-1.5	0.010-0.014	30-60
17-0675 Ankolux Impregnation Primer	Yes, with small nozzle	Yes, with small nozzle	50-70	Off	0.007-0.010	10-30
17-0678 Ankolux Aqua Iso Primer	Yes	Yes	80-100	0.5-1.5	0.010-0.012	30-60
17-0694 Woodcoat TP	Yes	Yes	80-100	0.5-1.5	0.010-0.012	30-60
Acryl primer	Yes	Yes	90-120	0.5-2	0.012-0.016	30-60
Interior topcoat	Yes	Yes	80-100	0.5-1.5	0.010-0.012 Best results without pre-atomizing nozzle	30-60

Notes:

- Material pressure = air pressure on airless pump x ratio of the pump. 4 bar on a 30:1 pump means 120 bar material pressure.
- Nozzle size is specified as a range. If high throughput is needed a larger nozzle is preferred.
- Nozzle angle should be adjusted to shape of object. Small piece like windows can be sprayed with a small angle whereas doors or panels are sprayed with wider angle.

Flash off after paint application

If paint has just been applied to a wooden surface or to the primer layer, it takes a few minutes to flow. This period is called Flash-Off. Ensure that paint has the possibility to flow and prevent infra-red for the first 5 minutes. Ideally If there is a separate area for a flash-off then humidifiers would be desirable here. The best flash off is achieved with a temperature between 15°C and 20°C and a relative humidity above 50%. No air movement should be present during flash-off.

Paint drying

Coatings can be applied on surfaces between 10°C and 30°C. And at a humidity below 79%. Factory and spray area conditions should ideally be between 16°C -28°C. Drying rooms should never be colder than 15°C. The reason is that waterborne paint will not cure below 15°C and therefore will be vulnerable in this period of curing.

> You can compare drying paint to drying clothes that come out of the washing machine. If it is too cold and too humid, clothes will not dry. If it is nice and warm and not too humid, your clothes will be dry within a few hours. Especially in combination with ventilation.

Increasing drying speed

Forced drying can be achieved in combination with ventilation and heat. Just normal air fans and "conservatory" fans can improve the drying time with hours. A steady air flow (0,2 to 0,5 m/s) is recommended.

Infrared lamps or heated air can be used to accelerate drying. Infrared heating lamps should not be too close to the wooden elements and the paint should be able to begin initial evaporation of water before being exposed to infrared to avoid blister formation. Please contact your Anker Stuy paint representative to guide this process.

Drying times after each coat depending on application weight and drying conditions

Product	Wet film thickness µm (mu)		10-15 °C	15-20 °C	15-20 °C	20-30 °
	Minimum	Maximum	No air circulation	No air circulation	With forced air speed > 0.2 m/s	With forced air speed > 0.2 m/s
17-0699 Hydrolux Impregnation	120 g/m2	140 g/m2	4hrs	2hrs	1hr	0.5-1hr
17-0549 Hydrolux Flowcoat	80 g/m2	120 g/m2	4hrs	2hrs	1hr	0.5-1hr
17-0537 Hydrolux Isoprimer	150 µm	250 µm	4-6hrs	2-3hrs	1-2hrs	Less than 1hr
17-0540 Hydrolux Filling Primer	150 µm	250 µm	4-6hrs	2-3hrs	1-2hrs	Less than 1hr
17-0535 Hydrolux Basecoat	150 µm	200 µm	6-8hrs	4-5hrs	2-3hrs	Less than 1hr
17-0648 Hydrolux topcoat thix SM	150 µm	200 µm	7-8hrs	4-5hrs	2-3hrs	Less than 2hrs
17-0649 Hydrolux Topcoat thix SG	150 µm	200 µm	7-8hrs	4-5hrs	2-3hrs	Less than 2hrs
17-0650 Hydrolux Topcoat Thix GL	150 µm	200 µm	7-8hrs	4-5hrs	2-3hrs	Less than 2hrs
17-0675 Ankolux Impregnation Primer	120 g/m2	150 g/m2	4hrs	2hrs	1hr	1hr
17-0678 Ankolux Aqua Iso Primer	120 µm	170 µm	8-12hrs	6-8hrs	4-6hrs	3-5hrs
17-0694 Woodcoat TP	120 µm	170 µm	8-12hrs	6-8hrs	4-6hrs	3-5hrs

NOTE: drying times given should be maintained for each coat. At the end of the drying time the product may be sanded, the next coat can be applied when the previous coat is ready for handling. IMPORTANT: see next table for minimum time between application of the last coat and exposure to the weather.

Factory drying conditions should always be monitored with appropriate measure equipment. Temperature and relative humidity are best measured with a systems that record the conditions continuously.

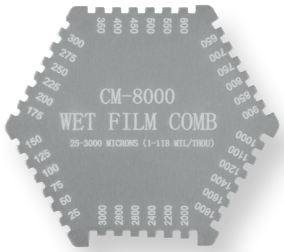
Minimum time between application of the last coat and exposure to the weather

After drying of the final coat the joinery elements are ready for further assembly and handling. However storage in uncontrolled conditions outside should only take place after a given number of hours depending on the temperature. The table below gives the minimum indoor storage times. Especially during winter months this should be controlled carefully.

Stored indoors at a temperature between 5°C and 10°C	Stored indoors at a temperature between 10°C and 15°C	Stored indoors at a temperature between 15°C and 20°C	Stored indoors at a temperature between above 20°C
120hrs	72hrs	60hrs	48hrs

Wet film thickness

To ensure you are providing adequate protection to your joinery elements, it is essential to know that you are applying the correct coating film thickness. If you do not apply enough paint, the coating system may be more susceptible to moisture uptake or early failure. Meanwhile, it is also important not to apply too much coating as this can extend drying times, waste coatings or lead to unsightly runs in the finish. To measure the wet film thickness we recommend using a Wet Film Gauge. The advantage of this is that you can get a reading while you are still spraying and correct any film loadings.



To ensure that all wooden windows and doors have the correct paint film thicknesses, we recommend keeping a log of wet film measurements by the painter or responsible operator. We recommend to measure at regular intervals throughout the working day and taking a measurements at both the inside and the outside of the sprayed frame. With changes in settings, product or operator it is recommended to take measurements more frequently. The measurement should take place between 1 and 3 minutes after application to allow the paint to level but before drying starts.

At Anker Stuy Coatings you can order a validated wet film gauge and a log book template.

Equipment cleaning

Clean equipment is essential to the smooth running of a spray operation. Anker Stuy Coatings provide a special cleaner called 25-0380 AW Glycol Cleaner. This material can be diluted to wash through spray equipment but can also be used undiluted on difficult to remove paint residue on equipment and other areas. As our coatings are water based, you can also clean with warm water. Liquid detergent can be added to water, but always rinse down the equipment at the end of any cleaning (either when using the Glycol Cleaner or detergent solution) with fresh warm water to remove any cleaning residue.

Waste water

If you often work with water-based paint, cleaning your parts, equipment, tools and empty packaging is important. You are not allowed to let water-based paint run down the drain. But disposing of the rinsed water as chemical waste entails high costs. We recommend a paint water disposal system with a capacity of 80 litres or 160 litres. More information about these systems can be found on https://trivececo.com/en/product/as120-wastewater-system-120l/

Handling and storage on site

Handling & storage – site care.

To ensure that joinery coated with the Anker Stuy factory finished coating systems performs at an optimum level, it is very important that the correct site handling, storage and care instructions are followed. Correct site handling will protect the factory finished joinery from delivery to the site through to its installation.

Site Practices

Joinery items should be delivered to site in good order. Moisture content should be within certain limits to ensure moisture related movement is minimised. Joinery manufacturers are advised to keep records of the moisture content of the supplied joinery. BS 644 provides details on what the moisture content should be.

Joinery Storage

It is highly recommended that joinery items are stored above the ground on stillage frames if possible. Joinery items must not be stored in contact with the ground. Protective wrapping should be designed to allow for good ventilation of the items to avoid any risk of condensation between the wrapping and the coating. Any tight-fitting wrapping must be removed on site to allow the free flow of air. Joinery should not be left uncovered or unprotected as standing water on horizontal or non-water shedding surfaces which may result in excessive water uptake on the items.
If metal box containers are utilised as a means of storage on site, care must be taken to ventilate such storage containers to avoid creating conditions of extreme temperature. Containers painted in dark colours are prone to absorb heat, resulting in the items inside getting too hot.

Protective films and tapes are sometimes used on site during transportation and installation. Only use suitable materials, as some are not compatible with water-based coatings. Manufacturer's recommendations should be followed and all protection should be removed within the specified period.

Risks from building materials

If plaster and renders are adjacent to the finished joinery item there is a risk of discolouration and staining as the excessive moisture can extract tannins from within the timber. Remove any contamination from plaster and other building materials as soon as possible with a mild solution of detergent and then rinse with clean water.

Concreting and plastering introduce high volumes of water into the internal spaces during the construction process. If this moisture is not properly ventilated from the building there is a very high risk that much of it will be absorbed into timber joinery items through the coating. Modern construction methods result in buildings that are well insulated and lack in natural ventilation. To promote the release of the moisture from the building and prevent the joinery from absorbing excessive moisture during the building process, certain measures can be employed. These include the use of good ventilation by opening windows and doors widely for at least 15 minutes every two hours. Where natural ventilation achieved by opening windows and doors is considered impractical, gentle internal heating and the use of dehumidification units are a possible solution.

Coating rectification work

Site assembly and modifications that result in the removal of coatings and/or opening of joints must be rectified. The use of Hydrolux End-grain Sealer is an essential part of the recoating process to fully protect such vulnerable areas. Full details on how to coat on site are available from the Anker Stuy technical department.

Premature exposure of joinery from the factory to wet climatic conditions or insufficient drying of the factory applied coating system can, in isolated situations, cause minor issues. These may include cloudy or milky contamination on translucent coatings or lighter coloured spots on opaque finishes. Hydrolux coating systems have excellent early water resistance which make these issues far less likely to occur. The milky or cloudy spotting will dissipate as the coating starts to cure.

Further advice

Any poorly finished building details, such as low quality site glazing, improperly fitted rainwater goods or failure to seal the perimeter around the windows or doors can result in damage to the coatings. These issues must be dealt in an appropriate and timely manner.

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