REDWOOD

Factory Method Statement

Clear Coatings

For all standard exterior joinery substrates

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1. Introduction and Purpose of Method statement

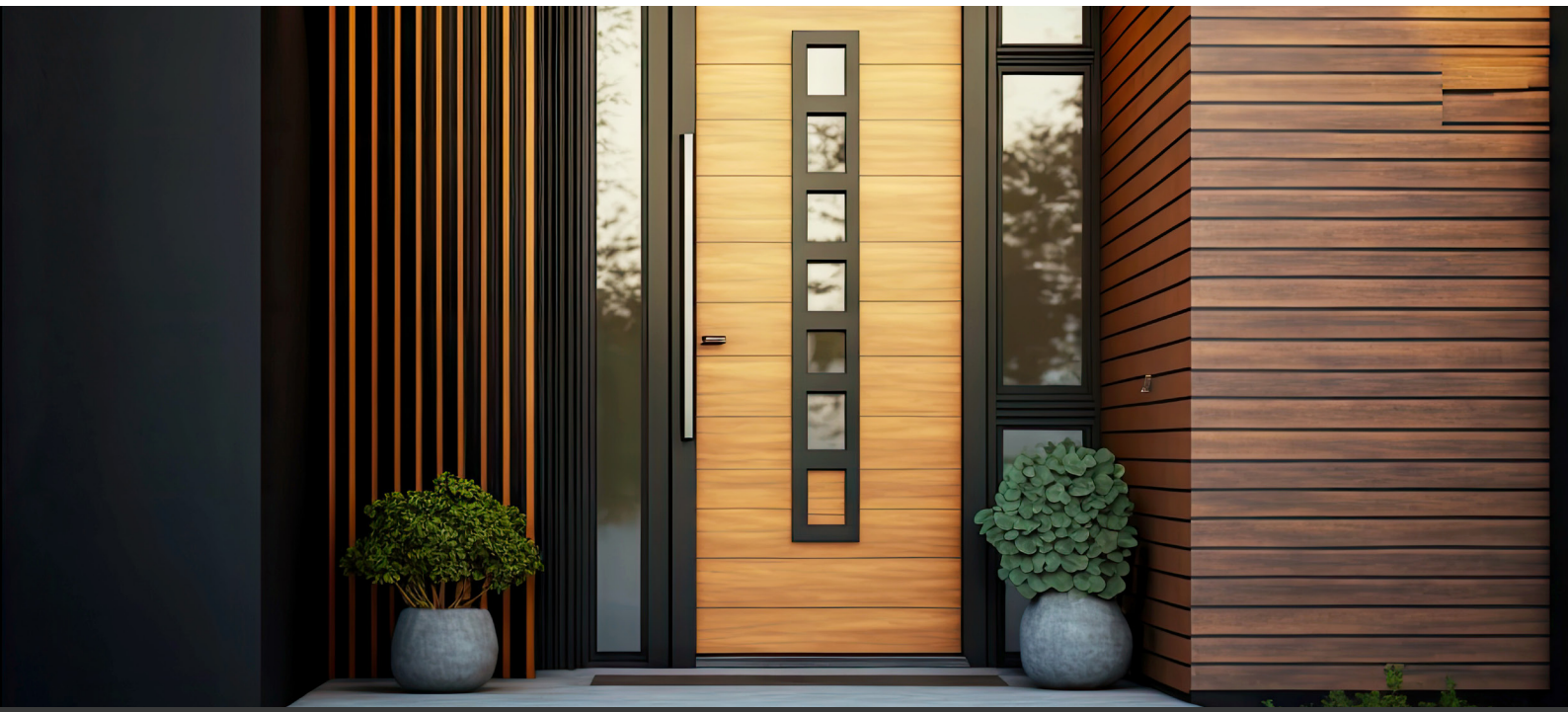
Joinery exposed to outdoor environment undergoes several physical and chemical phenomena caused by moisture, fog, sunlight, temperature, dust, and rain. The organic components of woods can be modified or degraded by extreme weather conditions. The change in an organic component may be caused by a chemical, enzyme, radiation, thermal energy, or maybe a combination of chemical, mechanical, and light energies. To enhance the life of outdoor wood, weathering must be taken into account, and wood should be protected and preserved. The best way to protect the joinery is to apply protection techniques during the manufacturing process. The purpose of this method statement is to provide an overview of the application of factory-applied clear finishes to manufactured joinery. This method statement helps manufacturers to adopt the best protection and quoting practices to enhance the lifecycle of wood products. Please refer to the relevant technical data sheet in conjunction with this method statement.

2. Design Consideration

Water plays an important role in the degradation mechanism of joinery. Windowsills and non-vertical surfaces shall be inclined to shed the water away from the window with a slope of no less than 9°. Water absorption will modify the physical properties of coatings and may cause chemical change; transmission through the coating also causes swelling, shrinkage, and movement of the substrate. During the application, thinning of the coating shall be avoided at sharp edges, as surface tension can cause the wet paint to cling under the horizontal surface. Thinning of coating can be avoided by keeping the minimum radius not less than 3mm as per British standard 644. For interior edges we recommend a radius of no less than 1.5mm. Transportation of water through capillary action can be avoided or reduced by widening the gaps or recesses in joinery. Our experts recommend that the gaps should be more than 3mm.

3. Why Clear Coatings?

The design of any exterior coating for wood required control of many factors in order to maximise the service life. Pigmented clear coating allows the wood texture and colour to be seen and protects against moisture, oxidation and UV light. The clear coating is highly demanding because of its good resistance to UV, and weather conditions. In comparison to opaque coatings, clear coatings are less durable and require more frequent maintenance. Our products provides protection to the exposed wood surface and offers long term protection against weathering.



4. Pre-coating activities

4.1. Timber Selection and Surface Preparation

It is recommended that the manufacturer should select the wood for outdoor joinery as per BS EN350 and BS EN335 which is good for exposed weather conditions. If the timber is not available as per BS EN 335 then it must be treated to conform to the BS EN 599-1. If the timber is treated with double vacuum impregnation then drying time must be followed that can vary from 2 to 14 days.

4.2. Moisture Content

The prime means of controlling long-term moisture levels is a good design and appropriate preservative treatments. The moisture content in selected timber must be approx. 13% ±2% prior to starting the coating procedure by the manufacturer.

4.3. Sanding of Wood Surface

An appropriate grade of abrasive paper shall be selected for sanding the wood surface and to avoid ripping of the substrate. The surface of the wood can be rougher if you sand across the grain, the process of sanding shall be done under the supervision of an expert. Power tools like an Orbital sander, belt sander, disk, or drum sander can be used to get them as fine as a possible smooth surface. The grit of the belt should be appropriately selected, ideally 120 with subsequent belt grades coordinated to close the surface and finishing belts 220 or 240 grit.

4.4. Filling of Damaged Surfaces

Prior to starting the coating, the surface of the wood shall be checked thoroughly. Any cracks, damaged and defective surfaces shall be filled with suitable material/wooden components.

- The small gaps and cracks can be filled with a fine surface filler "**Zobel Acrylspachtel**".
- For some significant damages, the wood can be filled with hard wax "**Bonda Woodfill**" to fill the holes.

For external joinery, due to exposure to extreme weather and temperature, the filling with soft wax filler is not recommended.

4.5. Cleaning and degreasing of wood surface

The working area should be free from any dust, salt, and grease. Always keep proper housekeeping in the final finishing area. Don't place the final product directly on the floor, plastic sheets or cardboard shall be used to place the wood on the floor. Some timber, especially tropical hard woods like Iroko, Teak, and Cedar has natural oil and chemicals, that should be thoroughly cleaned by using suitable panel wipe before applying the coating. The wood treated with linseed oil, tung oil, and Rustikal oil is protected against fungi. However, for outdoor usage, these treated woods requires cleaning with suitable panel wipe. The application of a suitable panel wipe shall be done immediately prior to applying the opaque finishes. Ensure that the wood surface is free from remaining cleaner, dirt, powder and contamination. In case of doubt, a test coating should be carried out.

4.6. End Grain Sealer & Knotting Solution

Rectify any minor defect on the surface. Any exposed end grain must be sealed with "**Zowo-Seal 5008**" and any knots shall be sealed with a knotting solution. Apply the knotting solution and let it dry and then apply 1 coat of primer ZowoTec 263 and let it cure and dry for a minimum of 4 hours. Apply the end grain sealer "**Zowo-Seal 5008**", 1 coat is normally sufficient but two coats, 45 minutes apart, can be applied for extra protection.

5. Safety, Environment Protection, Storage & cleaning Procedures

Appropriate Personal protective equipment P.P.E (mask, gloves, and safety glasses) shall be used while performing all activities during the joinery coating. All coating products should be stored in a dry and cold area. Coatings should be stored at a controlled temperature which is recommended 10°C and must be kept away from frost and cold draughts. Ensure adequate ventilation in the storage area, never keep material with open lids/covers. Storage should be on racks or pallets, avoid storage directly on the floor as cold weather can lead to the extreme temperature of the floor. No smoking, naked flames, and hot work in/adjacent to the storage area. Stack the material properly and never stack material too high.

Condition	Desired Parameters	
	Temperature	Humidity
Factory Condition	15°C - 25°C	40% - 70%
Drying Area	18°C - 30°C	30% - 50%

Temperature and humidity parameters outside these conditions will impact the coating ability to dry, cure and long-term performance ability. Adequate ventilation should be arranged to replace the damp air with fresh dry air on hourly basis. Tools can be cleaned immediately after use with water or Zowo-Clean Hydro Cleaner.

6. Products

Zowotec 203	Clear Primer for dipping, flow coatings, brush or spray & brush application		Drying Ca. 4 hours
Zowotec 421	Clear Top Coat for spray application	Wet Film thicknes – one coat ca. 250um or 2 coats ca. 150um with intermediate sanding	Drying Ca. 4 hours at 150 um
Zobel V Joint Filler	V Joint Filler		
Zobel 5008	End grain sealer		
Zobel Acrylspachtel	Fine surface filler		

Pump Settings/nozzle sizes

Spraying Process	Nozzle (mm)	Pressure (bar)	Atomiser (bar)
Airless / Airmix	0,23 - 0,33	50 - 100	0 - 3,5
Low Pressure Air Spraying	1,8 - 2,7	2,5 - 3,5	./.

Further details relating to these products can be found on the Technical Data sheets for these products.

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