FIRECOAT™ EXTERIOR

TECHNICAL DATA SHEET & APPLICATION GUIDE

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FIRECOAT™

OVERVIEW

FIRECOAT Exterior is a water-based, halogen-free intumescent paint specifically engineered for the fire protection of various substrates. It provides a slightly textured grey finish and is formulated to meet the stringent requirements of AS 1530.8.1, which outlines fire-resistance tests for elements in construction subjected to simulated bushfire attack. Additionally, FIRECOAT Exterior includes UV protection, ensuring enhanced durability and long-lasting performance.

KEY ADVANTAGES

- Water-based
- Halogen-free
- Compatible with most water-based primers and exterior topcoats

Note: We recommend testing a specific topcoat on a small area first, as application conditions can vary and may affect performance.

WHERE TO USE FIRECOAT EXTERIOR

FIRECOAT Exterior is suitable for both interior and exterior surfaces, including natural and composite timber, brick, concrete, plasterboard, masonry, and structural steel. It can be used with or without compatible topcoats. For optimal speed and finish quality, we recommend applying FIRECOAT Exterior with recommended airless spray equipment. Please note that the final finish will have a slightly textured finish due to the intumescent properties of the product. FIRECOAT Exterior is not suitable for use on trafficable surfaces such as deck floors and stairways.

APPLICATION PROCEDURE

SURFACE PREPARATION

Before application, ensure that all surfaces are thoroughly cleaned, dried, and free from oil, grease, lose or flaking paint, and any other contaminants that could hinder adhesion. Any existing coatings with poor adhesion must be completely removed. For timber surfaces, ensure they are completely dry before application.

For steel surfaces, adhere to the specifications for metal finishing as outlined in AS 1627:

Part 1: Removal of oil and grease

Part 4: Abrasive Blast Cleaning

Please note that FIRECOAT Exterior does not provide corrosion protection for steel surfaces (as per AS/NZS 2312.1:2014 Category C2). We recommend using Carboline 635 primer beforehand to improve both adhesion and corrosion protection.

MIXING

Stir the contents thoroughly before use, either with a paint paddle or a power mixer, ensuring the paint is mixed evenly from the bottom to the top of the pail.

APPLICATION CONDITION

Only apply and cure FIRECOAT Exterior at temperatures between 10°C and 35°C, ensuring good air circulation and a relative humidity no greater than 75%. Avoid extremely hot or cold conditions for optimal results. Protect the coating from the elements and contamination during application to achieve the best performance and finish. We recommend that the applicator maintain a complete record of the application by filling out the Application Quality Control Form.

APPLICATION METHOD

FIRECOAT Exterior can be applied using a brush, roller, or airless spray:

- **Airless Spray:** Use equipment with a minimum 1 GPM rating at 3000 psi, such as Graco 795, 1095, or a similar model. Use a tip size of 531 or greater, with a pressure of 2100 psi or higher. Due to the unique properties of FIRECOAT, it's important to use an airless spray gun with the correct specifications to avoid clogging.
- **Brush:** Use a top-quality polyester/nylon blend brush or similar.
- **Roller:** Use a roller with a 20 mm or greater nap.

Important: Do not thin FIRECOAT Exterior. The use of a thinner is strictly prohibited.

Water-based acrylic paints can be applied as a topcoat for aesthetic purposes over FIRECOAT Exterior. We recommend testing the chosen topcoat on a small area to check for compatibility. Allow FIRECOAT to fully dry before applying the topcoat—refer to the drying time section for details.

Note: For a smoother finish, use a brush or roller with a small nap.

COATING THICKNESS & COVERAGE

To ensure the desired fire protection, it is essential to achieve the minimum dry film thickness (DFT) after the coating has fully dried. The easiest way to do this is by measuring the wet film thickness (WFT) immediately after application. You can then use the WFT to calculate the corresponding DFT, as shown in the table below.

Each coat should cover 1.43 square meters per litre. Here are the specifications for different BAL levels:

	Wet Film Thickness	Dry Film Thickness	Litres per coat	No. of Coats
BAL 29	0.7 mm	(0.34mm minimum)	1.43 sqm/L	1 Coat
BAL 40	1.4 mm	0.7mm (minimum)	1.43 sqm/L	2 Coats

Practical spreading rates may vary from the theoretical figures due to factors like substrate roughness and porosity, overspray losses, application methods, and environmental conditions such as wind, temperature, and humidity. Adjust application techniques or apply additional coats as necessary to achieve the specified DFT. Remember that conformance to specifications requires meeting the dry film thickness targets, not simply applying a certain number of coats.

HOW TO USE A WET FILM GAUGE FOR MEASURING PAINT THICKNESS

A wet film gauge is a simple tool used to measure the thickness of a paint while it's still wet. This helps ensure the correct application thickness, which is critical for achieving the desired protection and finish. Here is a step-by-step guide:

1. **Apply the Paint or Coating:**
Begin by applying the paint to the surface, ensuring it is evenly distributed.

2. **Choose the Appropriate Gauge:**
Select a wet film gauge that covers the range of thickness you expect for your application. The gauge has notches or teeth that correspond to different thickness measurements (usually in microns or mils).

3. **Position the Gauge:**
Hold the wet film gauge perpendicular (at a 90-degree angle) to the coated surface.

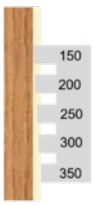
4. **Place the Gauge in the Wet Paint:**
Immediately after applying the paint, gently press the gauge into the wet paint so that it touches the wall surface underneath. Be careful not to drag the gauge, as this could alter the paint film.

5. **Read the Measurement:**
Remove the gauge and examine the notches. The last notch with paint on it indicates the wet film thickness. For example, if the paint fills notch up to 150 microns but does not reach the 200-micron notch, the thickness is between 150 and 200 microns.

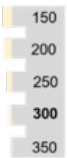
6. **Clean the Gauge:**
After use, clean the wet film gauge with an appropriate solvent or water to remove any paint residue. This will keep the gauge in good condition for future use.

a 

Wet film thickness (WFT) gauge

b 

WFT measurement using the gauge

c 

WFT reading between 300 and 350 microns

Note: The wet film thickness can be converted to dry film thickness. Please consult the table on the previous page.

By following these steps, you can accurately measure the wet film thickness and ensure your coating is applied according to specifications, leading to optimal performance and durability.

RECOAT AND DRYING TIME

Drying time depends on temperature, air movement, humidity, coating thickness, and application method. Under ideal drying conditions (24°C with good air circulation and relative humidity below 50%), the drying time for a single coat is as follows:

- **Between FIRECOAT Exterior Coats:** 4-6 hours
- **Before applying a Topcoat:** At least 12 hours

Ensure the paint is thoroughly dry to the touch before applying the next coat to prevent cracking and peeling. Full hardness is achieved after 7 days. Drying times may be longer at lower temperatures and/or higher humidity.

PAINT MAINTENANCE AND REPAIR

- Repair any substrate damage before reapplying FIRECOAT Exterior.
- Periodically inspect the surface for cracks or damage.
- Remove any loose material or paint flakes and sand rough edges.
- Ensure the surface is clean and dry before reapplying FIRECOAT Exterior to the intended thickness, following the manufacturer's original application specifications.
- After a fire, remove the char with a high-pressure hose. If no structural damage is found, follow the original surface preparation steps, and reapply all paint layers, including the anti-corrosion primer for steel surfaces.
- Protect the coating from contamination, such as dirt and grit, and keep it out of the weather during on-site application. Poor weather can affect adhesion, curing times, appearance, and performance. Only apply coatings in good weather. Wash off any airborne salt deposits and dry the surface right before painting.

CLEANING EQUIPMENT

- After painting, promptly clean application tools with cold, clean water. Flush airless spray equipment thoroughly.
- Dispose of wash water according to local regulations.
- Ensure any dried product is removed from tools.
- To minimize waste, use all product completely. If any remains, contact a licensed disposal company for proper disposal.

DISPOSAL

- Prevent release into the environment.
- Do not pour leftover paint down the drain.
- Dispose of contents and containers at an authorized chemical waste collection point, following local regulations.

LIMITATIONS

Topcoat Application: The choice of topcoat will impact the durability of the undercoat. Select high-quality water-based topcoats suitable for either interior or exterior use.

STORAGE

- Store at temperatures between 5-35°C.
- Keep away from direct sunlight and extreme heat.
- Ensure containers are tightly closed when not in use.
- Store out of reach of children and pets.

SAFETY RECOMMENDATIONS

- **Eye protection:** Wear safety glasses or goggles meeting the requirements of AS1336 and AS1337.
- **Respiratory protection:** When spraying, use respiratory protection with half or full mask with P2 or P3 ratings to protect against spray mists.
- **Skin protection:** Wear gloves made of PVC or rubber meeting the requirements of AS2161 and covered shoes.

Note: This product has been tested to be a non-irritant for both eyes and skin. However, if a skin irritation or rash occurs then wash the affected area with cold water and seek medical attention if you feel unwell or are concerned.

TESTING & RESULTS

FIRECOAT Exterior is tested and passed to the following standards:

- AS 1530.8.1 (BAL 40), Extremely high bushfire rating
- AS 5637.1-2015 Fire Classification | Group 1
- AS 1530.4-2014 – FIRECOAT Exterior on 4mm Mild Steel | FRL 60/-/-
- AS 1530.4-2014 – Exterior wall system* | FRL -/60/60
- ASTM D2898 Method B – Accelerated weathering testing
- ISO 5660 - Heat Release & Smoke Production
- FM Approvals Standard 4975

** Tested on a plasterboard wall system with 10 mm standard grade plasterboard over 35 mm x 70 mm timber framing with glass wool insulation.*

Additionally, the product has been certified as non-irritant to skin and eyes by an independent testing laboratory.

Disclaimer: While every care is taken and users are always directed to follow the instructions for application explicitly, Flame Security International Pty Ltd has no direct control over the end application of the product. Flame Security International Pty Ltd nor any of its employees, contractors or agents are responsible or liable for any claim, loss or damage which might arise from the use of FIRECOAT Exterior.

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FIRECOAT EXTERIOR APPLICATION QUALITY CONTROL

FACTORS AFFECTING COATING APPLICATION SUCCESS

The success of any coating application can be influenced by multiple factors, including:

- Ambient conditions during surface preparation, application, and curing.
- Cleanliness and condition of equipment.
- Suitability of the chosen coating system.
- Correct application methods for surface preparation and coating.
- Adherence to specified dry film thickness.
- Quality of the paint used.
- Proper site access, lighting, and ventilation.

Thorough inspection and detailed record-keeping are essential for ensuring quality assurance, facilitating future assessments, and possibly supporting warranty claims. As the product manufacturer, Flame Security International recommends that applicators maintain, at a minimum, the following records during the application of FIRECOAT Exterior and related products:

The following tables serve as a guide for coating applicators to document:

- Coating Inspection: (Refer to Table 1)
- Equipment Details and Conditions: (Refer to Table 2)
- Surface and Ambient Conditions: (Refer to Table 3)

TABLE 1 – COATING INSPECTION

Project/Item Name/Reference:		**ID No.:**	
Description:		**Date:**	
Substrate:		**Thickness:** mm	
Coating System	**1st Coat**	**2nd Coat**	**3rd Coat**
Product			
Batch #			
Mixed Prior to Application	**Y / N**	**Y / N**	**Y / N**
Application Method*			
Date & Time of Application			
Wet Film Thickness (microns)			
Specified			
Average			
Maximum			
Minimum			
Extra Readings Taken?†	**Y / N**	**Y / N**	**Y / N**
Dry Film Thickness (microns)			
Specified		**Average**	
Maximum		**Minimum**	
Quality (inspect for defects)	**Pass** ☐	**Reject** ☐	**Repair** ☐
Comment			
Signed	**Printed Name:**	**Date:**	

** Application method: B = Brush, R = Roller, A = Airless spray*
† Please attached record.

TABLE 2 – EQUIPMENT DETAILS AND CONDITIONS

Project/Item Name/Reference:			**ID No.:**	
Description:			**Date:**	
Substrate:			**Thickness:**	mm
Site Work Area Conditions **Interior** ☐ **Exterior** ☐ **Poor ventilation** ☐ **Well-ventilated** ☐ **Clean** ☐ **Dusty** ☐ **PPE usage** ☐				
Test Equipment				
Test	**Standard**	**Type/Model**	**Calibration Date**	
Wet Film Thickness	**AS 3894.3**	**Other**		
Application Method*				
Roller/brush specification (if use):				
Spray Equipment	**Model:**		**Gun:**	
	Tip Size:	**Needle:**	**Air Cap:**	
Air Supply	**Compressor Model:**	**Capacity:**	**Air Pressure:**	**Water Trap** Y / N
Spray Application	**Pressure Pot:**	**Airless Pump:**	**Gun:**	**Filter** Y / N
Comment				
Signed	**Printed Name:**		**Date:**	

** Application method: B = Brush, R = Roller, A = Airless spray*

TABLE 3 – SURFACE AND AMBIENT CONDITIONS (FOR EXTERIOR APPLICATION ONLY)

Project/Item Name/Reference:	**ID No.:**
Description:	**Date:**
Substrate: **Thickness:** mm	**Applicator/Supervisor:**

Weather Conditions (Y/N, Comment)

Time	Clear/ Sunny	Over-cast	Fog	Dew	Rain	Wind
0600/start						
0900						
1200						
1500						
1800						
Other						

Ambient/Surface Conditions (Y/N)

Time	Ambient Temperature, ºC	Substrate Temperature, ºC	OK to Paint?
0600/start			
0900			
1200			
1500			
1800			
Other			

Surface Preparation

Surface Condition at Time of Application	**Free Of (Y/N):**				
	Dust And Spent Abrasive ☐	**Oil And Contaminants** ☐	**Flash Rusting** ☐	**Weld Porosity** ☐	**Weld Spatter** ☐
	Weld Slag ☐	**Sharp Edges** ☐	**Laminations** ☐	**Burrs** ☐	

Comment

Signed	**Printed Name:**	**Date:**