

Dulux APP *Surfaceshield*[™] HD

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Non-Sacrificial Anti-Graffiti Vertical Surface Treatment

How does it work?

APP Surfaceshield HD is a **water-based solution** used to protect surfaces from damage caused by graffiti, pollution and everyday contaminants as well as meeting the most stringent VOC regulations. The coating is **non-sacrificial** and **long term surface protection** is achieved after a **single application**.

APP Surfaceshield HD is non film-forming and penetrates even the smallest pores without modifying the optical appearance or water vapour permeability of the substrate.

The **chemical bonding and interactions** that occur through the application of APP Surfaceshield HD provides surfaces with the following properties:

- Reduction in surface energy providing water and oil repellency
- Resists substrate penetration of most types of graffiti.
- Enhanced durability and abrasion resistance

Graffiti on surfaces protected with APP Surfaceshield HD (heavy duty) can be removed using hot water pressure, making it the ideal solution where **economic maintenance cleaning** is desired. The use of cleaning agents or graffiti removers may also be required in combination with hot water pressure cleaning for the removal of stubborn stains.

Suitable substrates

Generally, APP Surfaceshield HD can be used to protect and preserve a wide variety of porous materials used in construction, retail, municipality, hospital and urban environments.

Some suitable porous substrates include:

- Clay/brick masonry
- Natural Stone
- Concrete
- Non-glazed tiles
- Sandstone*

* Soft and easily damaged substrates, such as Limestone and some Sandstone, may require specialized preparation prior to treatment with APP Surfaceshield. Refer to your Dulux Protective Coatings Specifications Consultant for specific advice.

APP Surfaceshield HD has been designed for **vertical surfaces** and is ideal for protecting walls, facades and roofs.

Where the protection of **non-porous** surfaces is required APP Surfaceshield S (sacrificial anti-graffiti coating) should be used.

Refer to Table 1 on the following page for a more detailed comparison between the APP Surfaceshield products available.



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Table 1: APP Surfaceshield Product Comparison

Product		Surface Type	Protection Against
APP Surfaceshield S	<ul style="list-style-type: none"> • Self sacrificial vertical surface treatment • Medium-long term surface protection • Re-application required • No hazardous chemicals or solvents required to clean graffiti 	<p>Non porous surfaces</p> <ul style="list-style-type: none"> • Suitable non ferrous substrates • Suitable painted or coated surfaces <p>Porous surfaces</p> <ul style="list-style-type: none"> • Clay/brick masonry • Natural stone • Concrete • Non-glazed tiles • Wood <p>Very porous surfaces</p> <ul style="list-style-type: none"> • Sandstone 	<ul style="list-style-type: none"> • Vandalism caused by graffiti, paint and permanent markers • Atmospheric pollution, dirt and grime
APP Surfaceshield HD	<ul style="list-style-type: none"> • Non-Sacrificial vertical surface treatment • Long-term surface protection • Single application • Use of cleaning agents or graffiti removers may be required for removal of stubborn contamination 	<p>Porous surfaces</p> <ul style="list-style-type: none"> • Clay/brick masonry • Natural stone • Concrete • Non-glazed tiles <p>Very porous surfaces</p> <ul style="list-style-type: none"> • Sandstone 	<ul style="list-style-type: none"> • Vandalism caused by graffiti, paint and permanent markers • Atmospheric pollution, dirt and grime • Construction damage, grout staining and marking
APP Surfaceshield HD-H	<ul style="list-style-type: none"> • Non-Sacrificial horizontal surface treatment • Long-term surface protection • Single application • Use of cleaning agents or mechanical scrubbing may be required for removal of stubborn contamination 	<p>Porous surfaces</p> <ul style="list-style-type: none"> • Clay/brick masonry • Natural stone • Concrete • Non-glazed tiles <p>Very porous surfaces</p> <ul style="list-style-type: none"> • Sandstone 	<ul style="list-style-type: none"> • Chewing gum • Oil and food stains • Tyre marks • Mould • Dirt & Grime

* For optimum protection against graffiti APP Surfaceshield HD can be combined with APP Surfaceshield S.

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Application

1. Surface Preparation

Any previous coatings or sealants must be removed prior to application of APP Surfaceshield HD. The surface must be free from contaminants including, grease, oil, dirt and other loosely adhering materials. Cleaning with an industrial detergent and hot water or with a high-pressure cleaner may be required for heavily soiled surfaces.

Ensure the surface is dry before applying APP Surfaceshield HD. The substrate pores need to be **substantially dry and free of water** to ensure **maximum penetration and coating** of APP Surfaceshield HD.

The presence of any permanent chemicals such as concrete densifiers may **negatively influence** the performance of the APP Surfaceshield HD.

2. Application

The surface should be pH neutral. Application over strongly alkaline surfaces may limit the coatings effectiveness. The alkalinity of a surface can be easily measured using pH indicator paper prior to application.

Ensure the surface is dry before applying the APP Surfaceshield HD. The amount of APP Surfaceshield HD required will vary in relation to the porosity of the surface being coated. Refer to table 2 below for a rough indication of the **spreading rates** required for the surface to be protected.

Successive applications up to the saturation point must be carried out wet-on-wet since, once allowed to dry, no further material can be added due to the high degree of hydrophobicity induced.

Table 2: Estimated coverage of APP Surfaceshield HD

SURFACE	PREPARATION GUIDE	SYSTEM		COVERAGE (m ² /L)
		Coat	Product	
POROUS (clay bricks, natural stone, concrete)	Clean and degrease surface to remove contaminants.	1st Coat	APP Surfaceshield HD	5
		1st Coat	APP Surfaceshield HD	5
		2nd Coat	APP Surfaceshield S	3-4
VERY POROUS (sandstone)	Clean and degrease surface to remove contaminants.	1st Coat	APP Surfaceshield HD	3-4
		1st Coat	APP Surfaceshield HD	3-4
		2nd Coat	APP Surfaceshield S	2-3
		3rd Coat	APP Surfaceshield S	2-3

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3. General cleaning and graffiti removal

Hot water power washing is the most effective and fastest cleaning method. When power washing, a continuous flow of hot water (>75°C) on board water heater is recommended. Hot water is preferred as this helps emulsify grease, oil and other contaminants and speeds up the cleaning process using low pressure.

Use a minimum 45° angle flat spray tip. Spray power should not exceed 65 bar and a spray distance of 10cm should be maintained. Avoid higher pressure water washing as this causes abrasion and may compromise the protective treatment. Surfaces protected with APP Surfaceshield HD may be damaged by harsh cleaning methods and aggressive cleaning chemicals. The use of turbo nozzles should not be used in any circumstance as they require high pressure and will cause abrasion of the substrate surface.

Table 3: Power washing settings

Pressure Setting (bar)	Minimum distance to surface (cm)	Minimum Tip Angle
60	10	45°
125	25	45°
165	40	45°
200	50	45°

For areas polluted with vegetable oil, motor oil, grease or paint, the use of cleaning agents or graffiti removers may be required. See table 4 below for a list of recommended cleaning agents. When using cleaning agents it is important that the manufacturers' instructions are followed correctly.

Table 4: Recommended cleaning agents

Type of pollution	Cleaning agent	pH Range
Light pollution without oil or grease	None or mild soap	7.5-9.0
Medium pollution with food spilling, light oil and grease	Mild bio degreaser	9-11
Heavy pollution by oil, grease or gasoline	Citrus degreaser	<11.5
Paint or graffiti	Solvent free graffiti remover	12-13

When choosing a cleaning agent the following should be considered:

- No cleaning agent should contain harmful solvents
- Cleaning agents should have a zero or low VOC content
- Eco-friendly certified products are preferred
- Biological degreasers/digesters containing non-pathogenic bacteria cultures should not be used as cleaning agents
- Provide the MSDS of the chosen cleaning agent to your Dulux Protective Coatings representative before using

Note: This PC Tech Note should be used in conjunction with the relevant data sheet before using any APP SurfaceShield product.

For more information regarding APP Surfaceshield S refer to Tech Note 3.13 or for more information on APP Surfaceshield HD-H refer to Tech Note 3.15.

For more information, please contact the Dulux Protective Coatings Technical Consultant in your state.