Dulux PROTECTIVE COATINGS

Benefits of Coating Floors

Concrete is a common construction material in both residential and commercial construction, due to its functionality, strength, durability, versatility and overall performance. Concrete has very high compressive strength, it does not warp or rot, leading to it being an excellent flooring material. However, uncoated concrete has drawbacks, all of which can be overcome by the application of a protective coating.

Rectifying imperfections in concrete

The look and aesthetics of raw concrete can be variable and often unappealing. Even when the raw "industrial" concrete look has been desired and specified, the final appearance of concrete may not be what the architect or designer desired due to surface stains, streaks and marks left from curing compounds, as well as form oils, release agents and mortar smears. Furthermore, site damage and wear-and-tear may be more apparent on raw concrete.

Aside from these aesthetic draw backs of raw concrete, imperfections arising from blowholes, honeycombing and on-site damage can also impact the integrity of the concrete itself, and will require filling and patching, which can further impact the aesthetic finish of the uncoated concrete floor. Applying a suitable protective coating system will enhance the appearance of the floor by concealing these imperfections.

Prevention of spalling

Fresh concrete is highly alkaline. This alkalinity prevents reinforcing steel from rapidly corroding due to the passivation effect of the concrete when in intimate contact with steel. Uncoated concrete, however, readily reabsorbs (depending on the density of the mix and any sealer/curing agent used on the surface during curing) moisture and carbon dioxide, which neutralises the concrete by lowering its alkalinity, leading to the corrosion of the reinforced steel. When steel corrodes, the iron oxide corrosion products take up to eight times more space than the original steel, creating stress in the concrete. Whilst concrete has very high compressive strength, its flexural strength is relatively low, and as a result the concrete cracks around the reinforcing steel.

Coating concrete with suitable protective coatings will prevent this neutralisation process from occurring, by retaining the concrete's naturally high alkalinity.

Resistance to chemical attack

Uncoated concrete is sensitive to attack by many different chemicals. Acids can easily corrode the concrete and with repeated exposure can cause the concrete to eventually breakdown. To protect concrete floors from chemical attack, apply a suitable protective coating based on the chemical resistance requirements.

Increasing safety

Uncoated concrete has low light reflectance, absorbing light energy yet emitting little. Application of a smooth, light-coloured floor coating enables the floor to reflect more light which enhances the lighting and visibility, leading to a brighter, safer work environment.

Furthermore, colours can be used to mark different floors areas in factories. For example, red identifies danger and fire protection, yellow identifies caution and green identifies safety and first aid. For more information on the use of colour for safety purposes, refer to Dulux® Protective Coatings Tech Note 5.4.1 Colour - Use of Colour for Safety Purposes.

The slip resistance of a floor can also be enhanced through the incorporation of additives or aggregates into the coating. Dulux Protective Coatings offers a range of aggregates that can be used with the Luxafloor range to provide slip resistance. The aggregates available are:

– Luxafloor Stir-In Aggregate - Fine
– Luxafloor Stir-In Aggregate - Coarse
– Luxafloor Broadcast Aggregate No. 36

For more information on the Aggregates, refer to Dulux® Protective Coatings Tech Note 3.5.1 Additives for Coatings - Aggregates for Slip Resistant Floors

Increasing practicality

Uncoated concrete (even “high strength”) has a natural permeability that allows liquids to absorb and stains to adhere, which makes the floor look dirty, whilst also being hard to clean and maintain.

Concrete that is poorly cured, generates surface dust, which continues for the life of the floor, or until the concrete is sealed. Therefore coating the floor prevents further concrete dust creation and accumulation. If not sealed, concrete dust can contaminate food, beverages, pharmaceuticals, electronic equipment, and other goods.

A suitable floor coating will also prevent the ingress of liquids. The porous nature of uncoated concrete makes complete removal of spills (and any associated odours) extremely difficult.

Filling voids, bug holes, cracks, honeycombs etc of the concrete floor and sealing the porous surface creates a smooth, easily cleaned and maintained floor.

In fact, coating a floor is a mandatory requirement for work-place hygiene in many industries.

Floor aesthetics

Changing the finish and colour of your floor through the application of a protective coating will enhance the overall look and feel of the space. A pleasant environment with floors that can be cleaned easily boosts both the efficiency and potential resale value of the property

Dulux Protective Coatings Flooring Range:

The Dulux Protective Coatings Luxafloor range offers a range of flooring solutions suitable for industrial applications such as office areas, commercial car parks, warehouses, manufacturing facilities, workshops, commercial garage floors, laboratories, retail areas and showrooms. The range offers both pigmented flooring solutions and clear coat options, in both solvent based and water based coatings. Please refer to the table below for more details on the Luxafloor product range.

	Product	Interior/ Exterior	Pot Life*	Dry Times			Volume Solids	Spreading Rate (sqm/L)	Colour Range
				Light Traffic*1	Recoat*1	Full Cure*			
Water Based	Luxafloor WB	Interior	45 Minutes	24 Hours	6 Hours	7 Days	50%	7.7	Tintable
	Luxafloor ECO2	Interior	2 Hours	24 Hours	4 Hours	7 Days	42%	6.5	Limited
Express	Luxafloor FCF	Both	8 Hours	2 Hours	2 Hours	1 Day	75% (White)	10.0	Limited
	Luxafloor Primer	Interior	1 Hour	3 Hours	3 Hours	7 Days	65%	6.5	No
High Build	Luxafloor LGE	Interior	1.5 Hours	14 Hours	14 Hours	7 Days	83% (Light)	6.7	Tintable
	Luxafloor HSG	Interior	1 Hour	7 Hours	7 Hours	7 Days	89% (White)	8.8	Tintable
	Luxafloor PTX	Both	2 Hours	24 Hours	10 Hours	7 Days	70% (White)	7.0	Tintable
Clears	Luxafloor CFS *Formerly known as Luxafloor WB Sealer*	Both	N/A	1 Hour	1 Hour	7 Days	15%	10.0	No
	Luxafloor CP	Both	N/A	24 Hours	6 Hours	7 Days	43% (Gloss)	10.8	No

For further product information refer to the relevant product data sheet.

* All figures are measured at 25°C and 50% relative humidity. Figures will vary when applied outside of these parameters.

1. Light traffic refers to the suitable amount of time before the floor can be walked on. Recoat time refers to the minimum amount of time before the floor can be recoated.

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