Controlled Environment Systems
North America

Protected by Kingspan WARRANTY

Kingspan CLEAN*safe* 120
PVC Anti-Bacterial Coating

Technical Features

Kingspan®

Kingspan CLEANsafe 120 PVC Anti-Bacterial Coating

1. Composition

1.1 Standard metal support

- Continuously hot-dip zinc coated low carbon for cold forming, type DX51D (UNI EN 10346:June 2009).

Other available metal supports

- Stainless steel – Part 1. List of the stainless steels (UNI EN 10088-1/97).

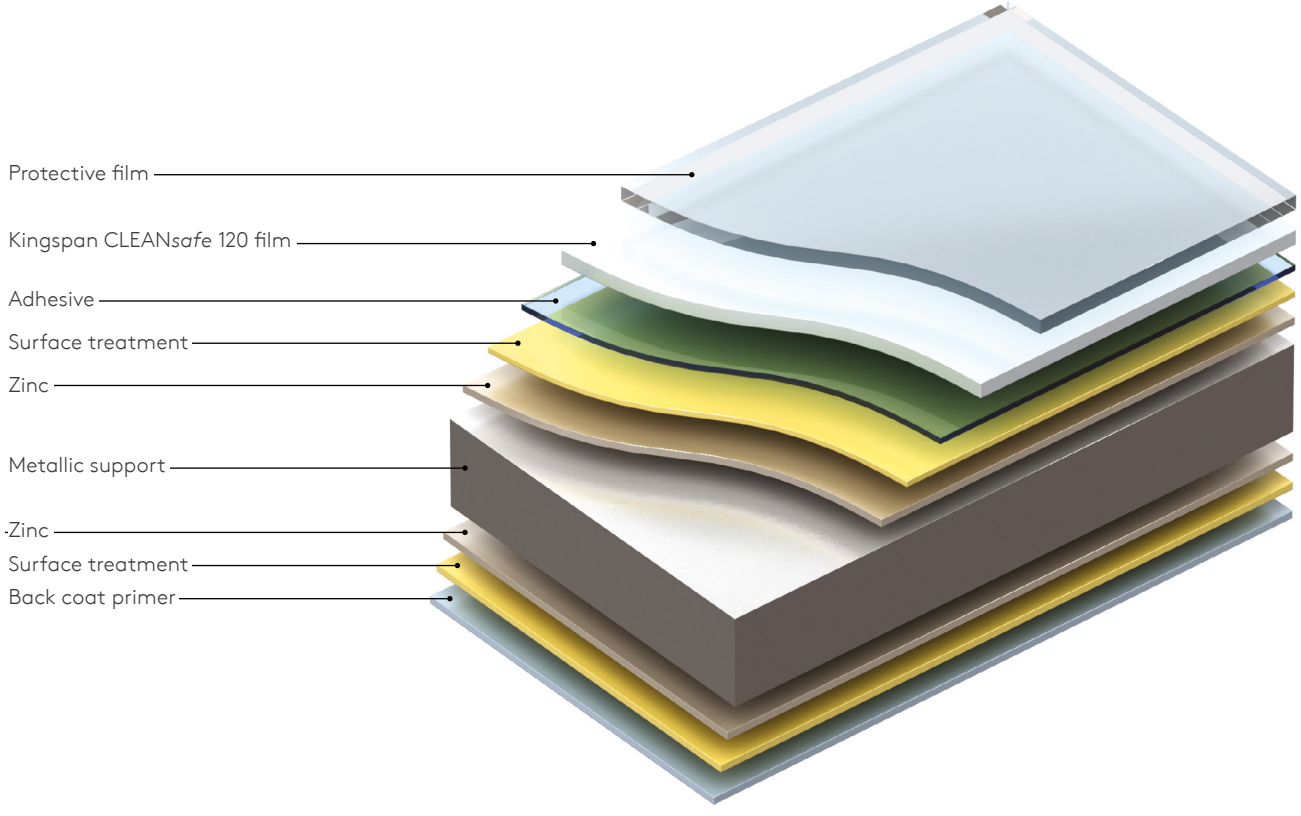
1.2 Adhesive

1.3 Coating

- Anti-bacterial rigid polyvinylchloride (PVC) Phthalates free.

This film is suitable for contact with food and substances for personal use according to the Ministerial Decree 21st March 1973 and subsequent updatings and to the European Standards 78/142/CEE, 80/766/CEE, 82/711/CEE, 85/572/CEE, 90/128/CEE, 92/39CEE. This film is suitable for contact with food and substances for personal use according to the Ministerial Decree 21st March 1973 and subsequent updatings and to the European Standards 78/142/CEE, 80/766/CEE, 82/711/CEE, 85/572/CEE, 90/128/CEE, 92/39CEE.

Product composition



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2. Technical Features

	Test	Norm	Result
2.1	**Coating nominal thickness**	- PVC rigid film - Thickness tolerance	100 m - 200 m ± 7%
2.2	**Adhesion after 6mm drawing depth**	**ECCA T6**	No film detachment
2.3	**Resistance to bending**	**ECCA T7 [1996]**	½ T
2.4	**Resistance to rapid deformation**	**ASTM D 2794-93** (weight 2 Kg; height of fall 90 cm)	No detachment and breaking of film
2.5	**Resistance to salt spray fog**	**ECCA T8:1996 - ASTM B 117-95** - Cold-rolled support - Hot-dip zinc support	 200 hours 500 hours
2.6	**Resistance to 100% relative humidity**	**ASTM D 2247-94**	1000 hours
2.7	**Pencil hardness**	**ECCA T4:1995 - ASTM D 3363-92a**	HB
2.8	**Stain resistance after 16 h** - Reagents	**ECCA T18 [1995] proc. 5.1 - ASTM D 1308-87** Butter, margarine, vegetable oil, vinegar, fresh and conserved tomato, strawberries, coffee, tea, solution at 5% of NaOH, solution at 5% of surface active agents, lubricating oil and grease, solution at 10% of citric, lactic and tartaric acid, oleic acid, spinach, lemon juice, mustard, Cif cream, Cif liquid, Lysoform liquid.	Presence of marks or stains on the area in contact with fresh tomato and coffee
2.9	**Brightness at 60°**	**ECCA T2 [1995] - ASTM D 523-89** Finishing SA Finishing SMA Finishing GMA Finishing PVA	 45 ± 5 25 ± 5 15 ± 5 30 ± 5
	Note: gloss value may be affected by embossing degree		
2.10	**Artificial light fastness** - Temperature - Lamps - Cycle - Reference	**ASTM G53-96** 55 ± 3 UV – A 340 Irradiance only International Blue Scale	> 6
2.11	**Taber abrasion resistance** - Index of abrasion after 1000 cycles with mole type CS10, weight 500 g per mole	**ASTM D4060-95** Finishing SA Finishing SMA Finishing PVA	 13 – 14 10 – 12 5 – 8

Note: the tests were carried out at the temperature of 23±1 °C, beyond what was expressely required by the reference norms.

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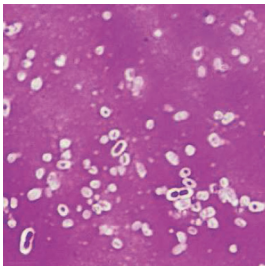
3. Anti-Bacterial Activity

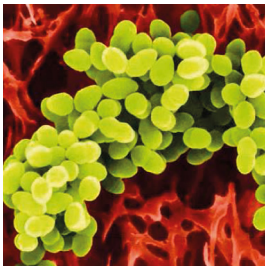
3.1	**Norms** - Bacterial strains	ISO 22196:2007 - ASTM E 2180-07 - JIS Z 2801			Kingspan CLEAN*safe* 120 satisfy all the norm requirements, showing a great anti-bacterial action
		- Escherichia Coli	(A)	ATCC8739	
		- Klebisella pneumonie	(B)	ATCC10031	
		- Staphylococcus aureus	(C)	ATCC15442	
		- Typhimurium	(D)	ATCC6538	
		- Listeria monocytogenes	(E)	ATCC13311	
		- Legionella pneumophila	(F)	ATCC19117	
		- Pseudomonas aeruginosa	(G)	ATCC43108	

A

B



C



D

E

F

G

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4. Maintenance of Coated Steel

4.1	**Cleaning**	- We recommend cleaning with soft water and neutral detergents, rinsing with care and drying the surface with a soft cloth. - Avoid the use of abrasive products.
4.2	**Small stains Removal**	- Small stains on the surface can be removed with mineral spirit or denaturated alcohol. - Stains caused by the substances absorption (such as nail varnish, lipstick, shoe polish, ink, tar) cannot be eliminated.

Note: it is preferred to avoid solvents such as acetone, toluene, ethylacetate, thrichloroetylene, perchloroetylene. These substances have an aggressive action on the PVC film.

5. Repairing or Painting of Kingspan CLEAN*safe* 120 Coated Steel

5.1	**Preliminary Operations**	- Before applying the enamel, clean the surfaces with neutral detergents diluted with water or denatured alcohol, then rinse with soft water and dry accurately.
	Usable Materials	- To repair or paint the surfaces coated with PVC film, we recommend to use the following products: - Water based acrylic enamels (for repairing or painting). - Bi-component polyurethane enamels with volatile solvents (for repairing).

Note: the subsequent reparing or painting may restrain the anti-bacterial action of Kingspan **CLEAN***safe 120*

6. Storage and Processing Advices

6.1	**Storage**	- Kingspan CLEAN*safe* 120 pre-coated steel, both sheets and coils, must be stored in a and dry place, without sudden changes of temperature, in order to avoid the possibility of condensation. The presence of humidity may trigger a corrosion process dangerous for steel and its coating, but also for the adhesion of polyurethane. - Material covered with the adhesive film for temporary protection must be stored away from heat sources and sun rays.
6.2	**Processing**	- Kingspan CLEAN*safe* 120 pre-coated steel should be processed within 6 months from shipment with the most suitable equipment in order to avoid abrasions of the film surface and/or braking of the same that may compromise its anti-bacterial action. - Bending and roll forming machines should consider, besides the final thickness of pre-coated steel, also possible tolerances to avoid re-rolling processing. - We recommend not to process our material at a temperature lower than 18°C.

Notes

Notes

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Issue 3: 11/2024