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EB SINAI film —

Invention patent for decorative sheet with electron beam hardened surface treatment layer and its manufacturing method



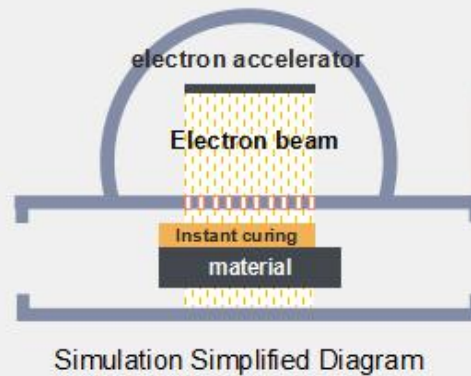
Electron Beam Curing

电子束固化/EB 固化

What is EBC ?

Electron Beam Curing

Use the high-energy electron beam generated by the electron accelerator to directly initiate the polymerization or cross-linking of the polymer resin



Electron Beam is Here!



EBC Features

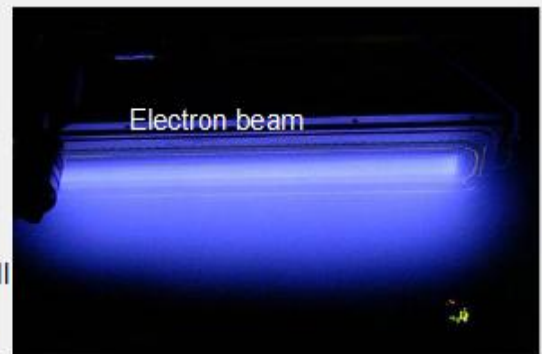
Features of Electron Beam (EB) Curing Technology

High energy : High concentration and high utilization

Fast curing : 5ms completely finish the curing

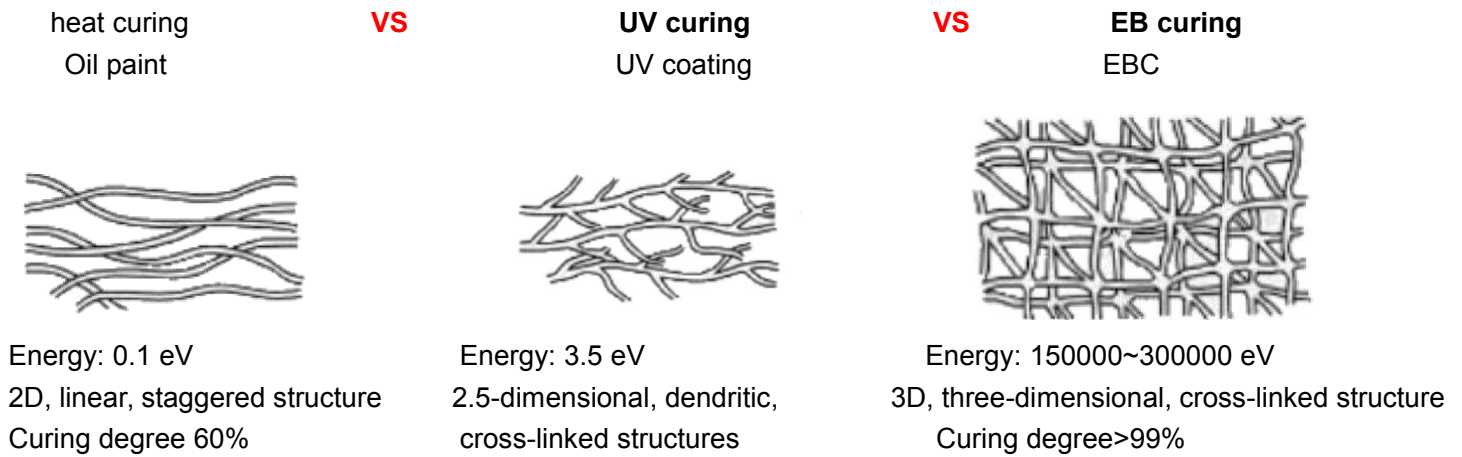
Strong penetration : No color blocking, complete reaction, no small molecule residues, precise and controllable curing depth.

Normal temperature curing : No thermal effect, no VOC pollution, no solvent, no photoinitiator



EB curing = aerospace grade material + food grade process technology

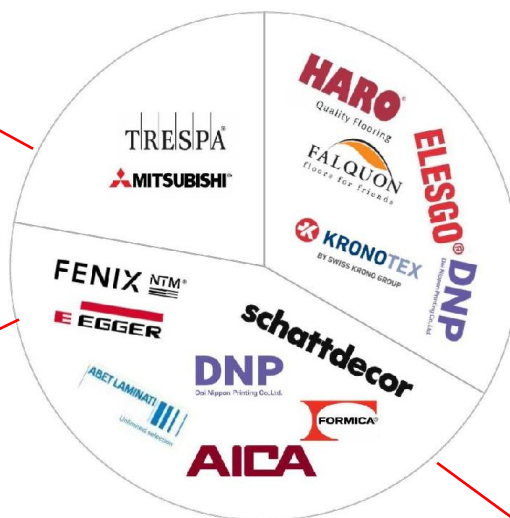
EBC technology comparing other coating technology



EB decorative material application field

25%, outdoor building materials
Anti yellowing/ easy clean/ Aging resistance

30%, floor
Wear resistance / anti scratch/high-performance

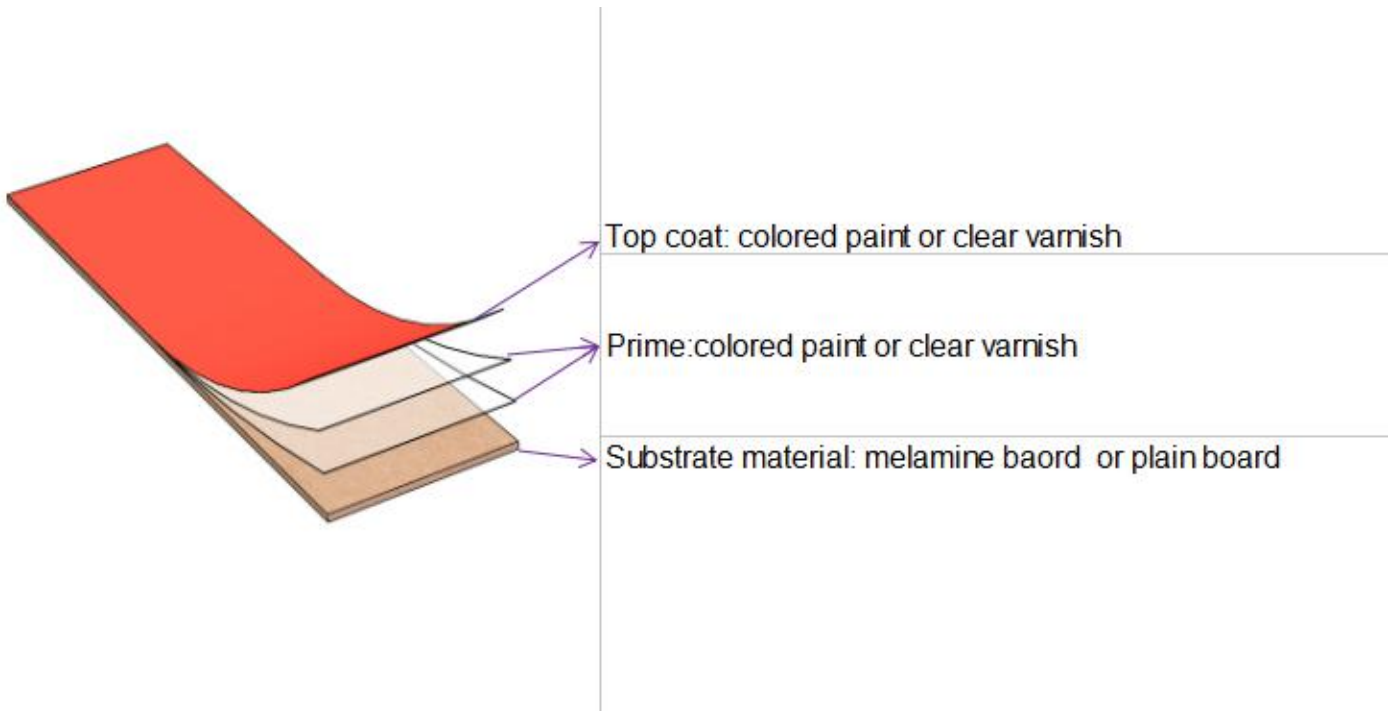


EBC widely used by other famous brand
in the world

45%, interior decoration
Anti-fingerprint, extreme touch

EBC finish products features

Production Process



Feature



Real color



Anti yellowing / Anti-aging



Easy clean



Scratches can be hot Repair



Corrosion resistant without leaving traces



"0" formaldehyde/ no bad smell

Product Testing

Visual, Touch, Physical / Chemical properties

Visual

visual

The diagram shows two vertical panels. The left panel is a solid red color and is labeled 'EB products' at the bottom. The right panel is a lighter, pinkish-red color and is labeled 'UV products' at the bottom. Text on the left side of the red panel includes 'EBC technology', 'Base Color varnish', 'two in one', and 'true color /natural'. Text on the right side of the pink panel includes 'coating products', 'Traditional curing technology', 'base Color + varnish', and 'color distortion'.

EBC technology
Base Color varnish
two in one
true color /natural

EB products

UV products

coating products
Traditional curing technology
base Color + varnish
color distortion

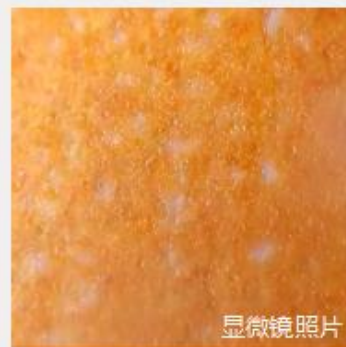


State under 50x microscope

Surface paint
Color is solid
paint
Color uniform
and plump



EBC technology



UV coating products
UV coating technology

surface is varnish
triamine paper color
Exposure of printing
defects

Touch



Surface state from a microscopic perspective



normal skin feel



gritty

Unique touch of EB curing technology

Nanometer Surface Morphology
Control System Based on NFCS
Precise, quantitative control of gloss
and feel

Physical / Chemical properties

	EB technology		UV coating (import coating matterial)			PETG
	EBC	Import	Domestic			Import
Sample	E1	F1	MC1	MC2	MC3	MC4
Aging resistance 1	0.24	0.3	5.90	4.35	4.49	2.67
Color fastness 2	≥4	≥4	< 4	< 4	< 4	< 4
Surface hardness	4H	4H	H	H	H	2H
Acetone resistance 3	≥4	4	1	1	1	4
Surface micro scratches ⁴	5 (透明)	3	3	3	3	3

Mark 1, Aging resistance, QUV, GB/T23983-2009, blackboard temperature 60°C, radioactivity 0.68w/m², Irradiate 168h

2, Color fastness, Xenon lamp, GB/T 17657.4.41-2013, wavelength 300-420nm, blackboard temperature 60°C, radioactivity 42w/m², Irradiate 48H

3, Acetone resistance, GBT17657-2018.Cotton balls, 16 hours,

4, Surface micro scratches⁴ Martindale Tester, BSEN438-2-2016, sponge(item7440), Rub the sample paint film160 times,

EBC technology coating film advantages

Anti yellowing

Yellowing resistance - no discoloration for ten years



Xenon lamp, GB/T 17657.4.41-2013, wavelength 300-420nm, blackboard temperature 60°C, radioactivity 42w/m², Irradiate 48H

Scratch resistance

Scratch-resistant - dense surface, longer use



Martindale Tester , BSEN438-2-2016. sponge(Item7440) , Friction sample paint film 160 times.

Stain resistance

Stain resistant and easy to clean - effortless and no marks



Eco- friendly

Bacteriostatic It has strong inhibitory and killing effects on common Staphylococcus aureus, Escherichia coli and other bacteria and molds, up to $\geq 99\%$. No bad smelling, "0" formaldehyde, Eco-friendly.



EB film advantages

Eco- friendly

anti Scratch

color stability

anti yellowing

anti-fingerprint

high hardness

heat resistance

stain resistance

wear resistance

scratch can be hot repair

Applications

wall panel

office furniture

ecological door

bathroom cabinet

cabinet door panel

wardrobe door panel

Kitchen cabinets doors

commercial space, ETC.