

Technical Information

Becoming the leading company in CREATING LIVING SPACE
that SECURES THE VALUE OF HUMAN AND ENVIRONMENT
High quality surface finishing materials with L.E.A.D

■ Interior Film BODAQ

BODAQ is a decorative film with adhesive that is applicable on site.

Recreate your world with BODAQ. It is an ideal way to finish many environments on site with little or no down time. BODAQ is used extensively for interior applications such as Hotels, corporate lobbies and elevators as well as exterior applications.

With its light weight and minimal thickness, BODAQ is a popular choice for cruise ship interiors.

BODAQ offers hundreds of patterns including solid color, abstract drawings and natural material replications such as wood and stone. BODAQ's original pressure sensitive adhesive ensures clean, fast installation on a variety of substrates. With its superior flexibility, BODAQ can be installed on highly detailed and 3D surfaces.

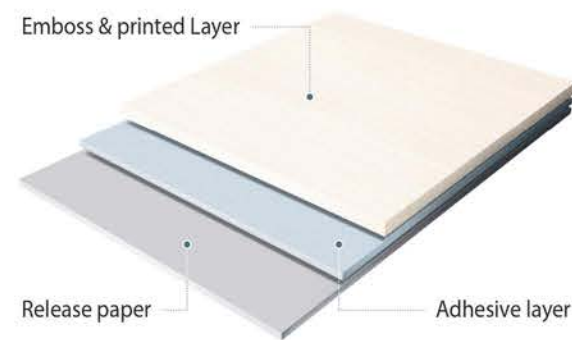
■ Product Structure

BODAQ is a printed film with adhesive

1. Emboss & printed film layer(vinyl-chloride plastic)
2. Simplified adhesive(acrylic plastic)
3. Release paper

The above is a representative structure of BODAQ.

The actual structures and materials may be slightly different for each series.



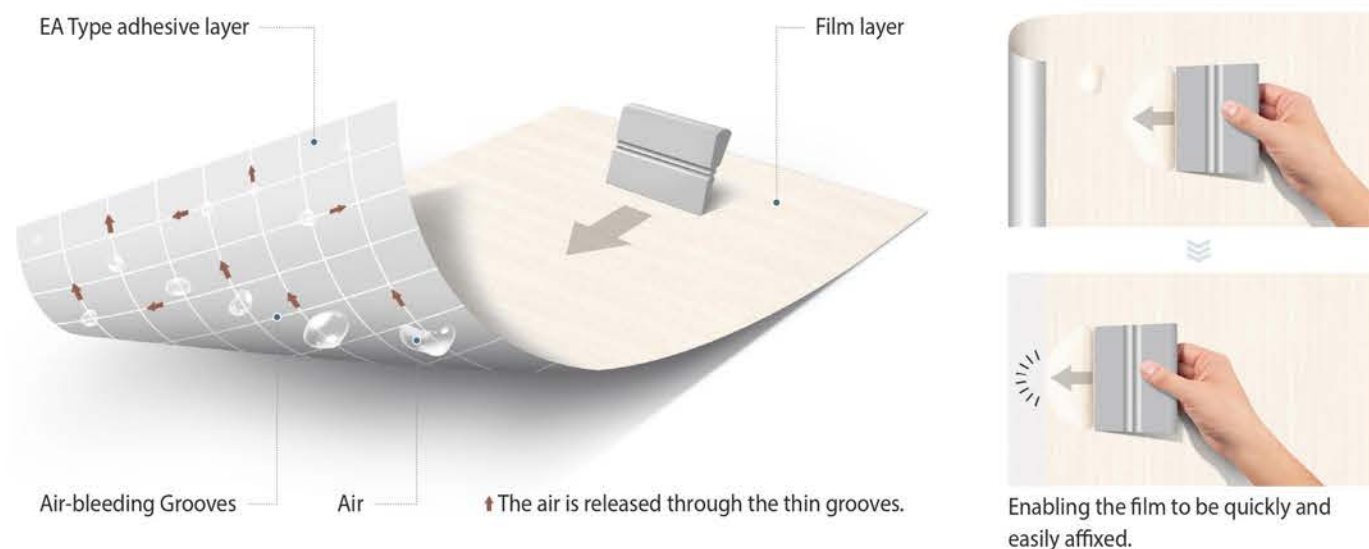
■ Easy to install with Airbubble control.

BODAQ is applied using an Acryl type adhesive, which has an adhesive surface with grid grooves for air-bleeding Airbubbles between the film and the substrate.

The Airbubbles are released along these grooves, enabling the film to be quickly and easily affixed to large or complex surfaces. This provides a higher quality finish.

Facilitates the release of air when the film is affixed, enabling easy application to large or complex surfaces.

■ Air bleeding Structure



Environment

We pay attention to nature

Hanwha L&C's BODAQ is an eco-friendly film that care about healthy environment.

- Free from harmful heavy metals (lead, cadmium, mercury, hexavalent chromium, etc)
- Formaldehyde (HCHO), the substance that causes sick house syndrome, is not released.
- Minimized release of volatile organic compounds (TVOC, toluene, etc)
- It meets the safety standard (KF mark standard) applied to wallpaper and paperboard.
- Meets the safety requirements for hazardous chemicals in the Common Safety Standards of Children's Products.
- Excellent antimicrobial and anti-mold function, which helps to maintain a pleasant surrounding environment.

Heavy Metal [Pb, Cd, Hg, CrVI]		Formaldehyde [HCHO]		Phthalate	
Standard		Standard		Standard	
[Pb] 5mg/kg [Cd] 0.5mg/kg [Hg] 2mg/kg [CrVI] 1mg/kg	None detected	0.12 mg/m³h	None detected	[DEHP] less than 0.1% [DBP] less than 0.1% [BBP] less than 0.1%	None detected

'Hazardous chemicals' criteria for the Common Safety Standards for Children's Products

Hazardous Substances [Sb, As, Ba, Cd, Cr, Pb, Hg, Se]			
Standard		Standard	
[Sb] 60mg/kg [As] 25mg/kg [Ba] 1000mg/kg [Cd] 75mg/kg	Satisfactory	[Cr] 60mg/kg [Pb] 90mg/kg [Hg] 60mg/kg [Se] 500mg/kg	Satisfactory

Safety

We pay attention to Safety

BODAQ is a safe interior film that can be used in any environment with excellent flame retardancy and quality stability.

Flame Retardancy [Certified by the Korean Fire Industry Technical Institute]		Stain resistance	
Carbonization length less than 20cm	Satisfactory		
Carbonization area less than 30cm²			
Flame retardant certification less than 3sec			
Smoke density 200 Ds			
		No Stains	

Obtain the certificate, Introduction of company for bidding construction projects, construction guide of our products by inquiring with our head office or distributor.

Technical Information

■ BODAQ Specifications

Item	Evaluation	Results
Dimensional stability	100 mm x 100 mm (4"x 4")crosscut is placed in the center of 150 mm x 150 mm (6"x 6") applied on 200 mm x 200 mm (8"x 8") aluminum plate and left for 2 days. Then, the largest gap at the crosscut point is measured.	Largest gap : under 0.3mm
Wear resistance	Rotated 7,000 times by a Taber Abrasion Tester (rotary wheel cs-10, 1,000cycle).	No change on surface pattern
Heat resistance	Adhesive performance measured when left in a temperature of 40°C(104°F) for 28 days after applied on an aluminum plate.	No abnormalities
Moisture resistance	Adhesive performance measured when left in a temperature of 45°C (113°F) and humidity of 95% for 30 days after applied on an aluminum plate.	No abnormalities
Cold shockproof nature	Film is applied on an aluminum plate, and a weight of 500g (1.1 lbs) is dropped from 10cm (3.9 inches) high under a temperature. Using a Duppon Impact Tester. (Impacter 12.7R)	No cracks on film
Weatherability	Irradiated for 250 hours using a Sunshine Weather-O-Meter.	up to Grey Scale 4 grade

■ Antibacterial Performance

Fungus Name	Immerse the specimen in the culture medium for 24 hours
E.Coli	Antibacterial activity value 2.0 or more
Staphylococcus aureus	Antibacterial activity value 2.0 or more

※ Note

- The test bacterium was cultured for 24 hours at 35 ± 1°C and 90% RH (Relative Humidity).
- Actual antimicrobial activity is more than 2.0 antimicrobial activity.

Classification	Solvent	Result	Reference
Water	Water	No change after 24 hours	Certified institutional certificate
Acid	Acetic Acid(44%)		
Ketone	Acetone		
Chemical Solution	Aqueous Ammonia(10%)		
	Sodium Carbonate(10%)		
	Sodium Chloride(15%)		
Alcoholic	Ethanol		
Chemical	Cleaning Agent		
	Iodine		
Contaminant	Coffee		
	Concentrated Milk		
Oil	Olive Oil		
	Paraffin Oil		

■ Compatible and incompatible materials for the application of BODAQ are as follows

Groundwork material	BODAQ	Groundwork material	BODAQ
Wood	Luan veneer	Overlay application	Overlap Application ○
	China veneer	Decorative sheet	Melamine Board ○
	Particle board		Plastic Laminate △*
	MDF	Glass	Glass ○
	Pure wood		Surface is Quality of glass falt and smooth ○
Boards	Plaster Board	Plastics	Artificial Mable ○
	Volcanic Silicate board		Acrylics * △*
Mortar	Silicate calcium Board		ABS * X
	Mortar		Hard Vinyl Chloride ○
Metal	Baked Enamel steel finish		Soft Vinyl Chloride X
	Galvanized steel plate		Polycarbonate * X
	Vinyl Chloride steel plate		Polyethylene X
	Aluminum		Polypropylene X
	Stainless steel		Nylon X
	Copper		Fluoro-Resin X
	Stereotype / Tin		Rubbers X
			Sealing Agent △

※ Need to confirm appearance in advance with test sample for materials marked with △. Needs special primer for X material

※ ○ : Compatible
X : Possible to fail in adhesion
△ : Base substrate irregularities are visible

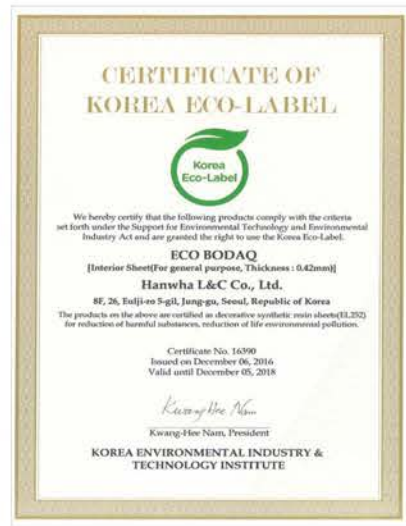
* : May swell from gas. Contact HANWHA for questions

■ Resistance to solvent and Chemicals

Classification	Solvent	Immersion time	Results
Water	Water	24 hours	No abnormalities
Acid	Chloride(10%)	24 hours	No abnormalities
Base(alkali)	Sodium hydroxide(10%)	24 hours	No abnormalities
Alcoholic	Ethanol	24 hours	No abnormalities
Ester	Ethyl acetate	5 minutes	It deteriorates*
Ketone	Methyl ethyl ketone	5 minutes	It deteriorates*
Perfume fellows system	Toluene	5 minutes	It deteriorates*

* : It exfoliates from a base material

Certification



Korea Eco Label



Carbon Footprint



Atopy Test Report



China Fire Retardant A2 test



China Fire Retardant B1 test



MPA- B1 Fire Retardant 2017



Heavy Metal Free, Non Phthalate, HCHO 2017



Anti-Bacteria 2017



Gas Emission 2017



General Property 2017



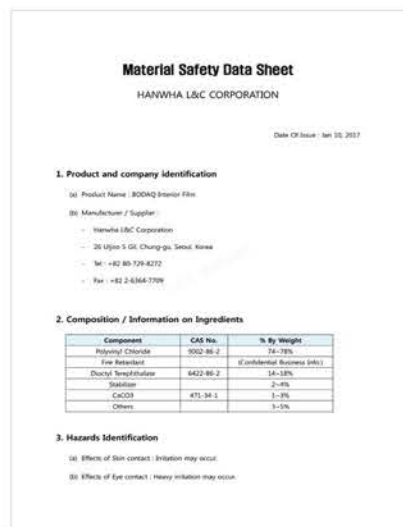
General Property 2017



General Property 2017



Contraction and Contamination 2014



BODAQ MSDS



Fire Retardant Approval



General Property 2017



General Property 2017



GHS MSDS OK-BODAQ PRIMER 2017