

Ceramic Composite Soundproof Paint

WAKOECO BLOCK

Product Overview

Newly Developed

Lightweight, thin-layer soundproof paint

Formaldehyde-free, environmentally friendly water-based paint

WAKOECO BLOCK is cutting edge soundproofing that effectively cuts noise while simultaneously suppressing vibration.

Improves indoor environments beyond blocking noise by deodorizing and preventing mildew!

Incombustible with excellent fire resistance.

The new mechanisms employed to block noise have been patented overseas in order to develop our product in Japan and across the globe.



WAKOECO BLOCK

About WAKO ECO PAINT Inc.

We began with the sale and manufacture of special ceramic-based ship-bottom paint, and have had record sales for over 15 years, both in Japan and abroad.

We are now carried by over 200 dealers throughout Japan.

Through application of our ceramics technology, we have developed new thermal insulation and soundproofing paints for use in a variety of construction applications beyond ship bottoms.



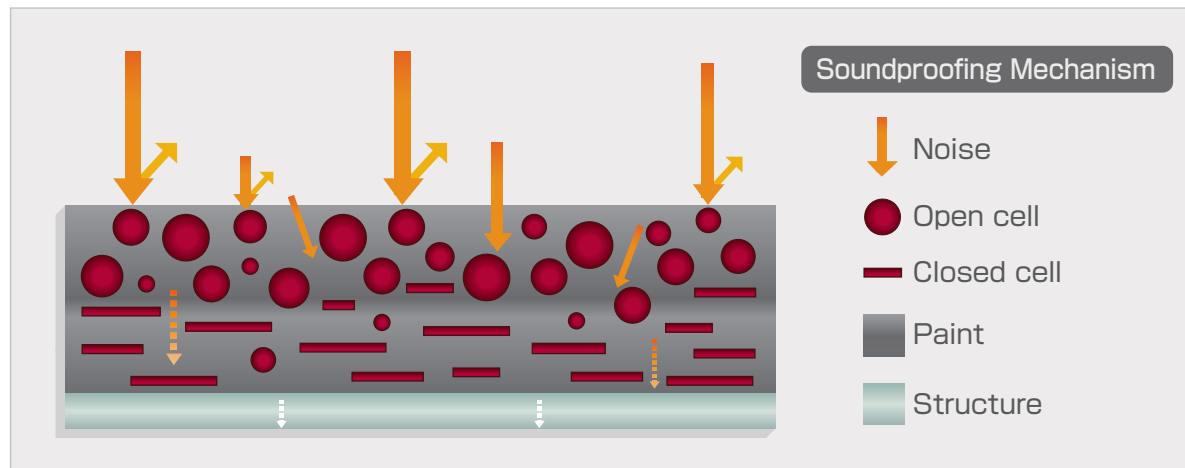
Hiroshima
JAPAN

Soundproofing Mechanism

■ Soundproof Structure

External noise is reflected off the cell surface when passing through the ceramic cell layer (open cell). Transmitted sound is further reduced by being absorbed by the many hollow areas between the cells.

Sound energy passing through the paint moves through a composite of various flake-shaped materials (closed cells) where it is modified into a different wave until it dissipates. This is based on the principle that kinetic energy created by friction in air vibrations is converted to thermal energy, blocking and reduction of noise is one of traits of this conversion.



■ Japanese Patent Pending

Korean patent acquired. International PCT application is filed and procedures are continuing for patents in Japan and other major countries.



KIPO (Korean Intellectual Property Office)
Patent Certificate

WAKOECO BLOCK Features

Water-based soundproof paint that provides a variety of protection, such as sound, heat and thermal insulation in addition to preventing condensation, mold and odor.

This paint is environmentally friendly, multifunctional and soundproof.

Environmentally friendly water-based paint

Soundproofing is made of unique acrylic binders and composite material. This formaldehyde-free, environmentally friendly water-based paint poses absolutely no danger to the human body.

Impact resistance

This strong, flexible coating resists fine cracks and structural breakage caused by physical impact.

Storage stability

May be stored for up to six months from date of manufacture (indoors, 5 to 35°C).

Incombustible material

This incredibly reliable material of this water-based paint is incombustible and heat resistant.

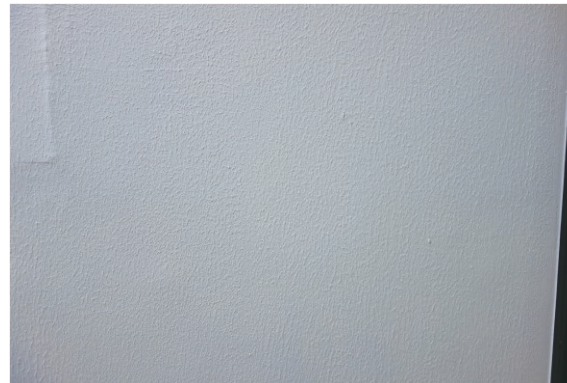
Applications

Anywhere where noise prevention is needed, from multipurpose halls, stations and art and music facilities, to hospitals, apartments, school, gymnasiums, factories and even ships.

Test Coating



Applied in order to check paint durability
and observe soiling and odor prevention
for the coated surface



Comparative Soundproofing Performance Test

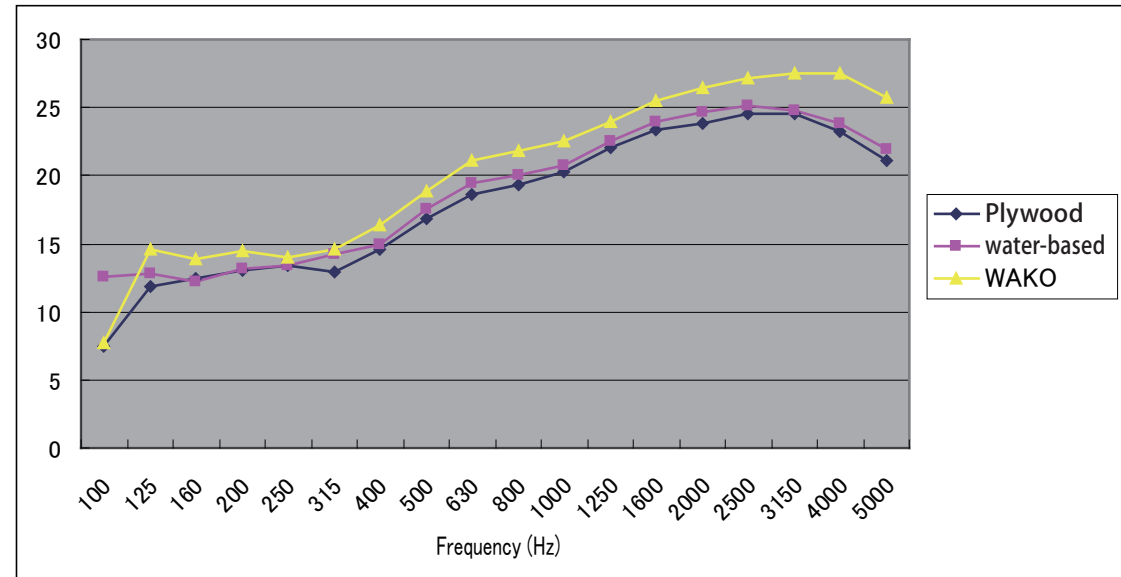
Test materials : Plywood 5mm
Plywood 5mm + water-based silicone paint
Plywood 5mm + WAKO Soundproof Paint

Location: Hiroshima Western Industrial Technology Center
 Date performed: June 7, 2018
 Facility used: Reverberation Chamber 1 / 2



Acoustic transmission loss *Higher values indicate larger noise reduction

Frequency (Hz)	Plywood	water-based	WAKO
100	7.5	12.6	7.7
125	11.9	12.8	14.6
160	12.4	12.2	13.9
200	13.1	13.2	14.5
250	13.4	13.4	14
315	12.9	14.2	14.6
400	14.6	15	16.4
500	16.8	17.6	18.8
630	18.6	19.4	21.1
800	19.3	20	21.8
1000	20.3	20.8	22.5
1250	22.1	22.5	24
1600	23.4	23.9	25.5
2000	23.8	24.7	26.4
2500	24.5	25.1	27.2
3150	24.5	24.8	27.5
4000	23.2	23.8	27.5
5000	21.1	21.9	25.7



Results

Acoustic transmission loss (noise blocking) is demonstrated on the plywood coated with WAKO soundproofing at all the frequencies listed below, with particularly high frequencies exhibiting more significant differences in sound insulation.

Test Report

Test Location:
Japan Paint Inspection and Testing Association

Falling-weight(Dupon method)	No abnormality.
Cupping	No cracking and peeling at depth of indentation 8.0mm
Adhesion(Cross cut)	Classification 0
Alkali resistance No abnormality. 24hours	No abnormality.
Acid resistance No abnormality. 24hours	No abnormality.
The effect of heat 1hour	Temperature:150° C
	No abnormality.
	Temperature:200° C
	Color difference : (Rating 1) *1 No cracking, blister, peeling and loss decrease.
Resistance to neutral spray 96hours	No abnormality.
Accelerated weathering 1000 hours	No abnormality.
Accelerated weathering 2000 hours	No abnormality.
Reflectance solar at 0hour, 1000 hours (The near-infrared region)	0hour : 58.5
	1000 hours : 58.7
Reflectance solar at 2000 hours (The near-infrared region)	58.1
Humidity and cool-heat cycling	No abnormality.
Permeability test	0.3ml
Flexibility test	No abnormality.

*1 JIS K 5600-4-3:1999 Visual comparison of the color of paints Annex B (normative) Color difference rating scheme
Table B. 1 Rating scheme for components of color difference by visual assessment

Specifications

Technical Data

Information	Base color	OFF-WHITE, Light color (order)			
	Painted surface	matte			
	Mixing ratio	—			
	Theoretical coverage	0.5kg/m ²			
	Flash point	—			
	Drying time	5℃	10℃	20℃	30℃
	— Surface dry	1hr	45mins	30mins	20mins
	— Hard dry	6hrs	4.5hrs	3hrs	2hrs
	Overcoat interval				
	— Min	8hrs	6hrs	4hrs	3hrs
Application	Precending coats	Depending on the material.			
	Number of coats	3 or more times			
	Method of dilution	Water			
	Method of dilution ratio	Max.10% by volume.			
	Method of application	Airless spray , Roller , Brush			
	Application condition				
	— Relative humidity	Max.85%			
	— Substrate temperature	Min.5℃ (at least 3℃ above the dew point)			
	— Atmosphere temperature	5～35℃			
	Airless spray				
	— Nozzle orifice	0.023 ～ 0.030 inch			
	— Nozzle pressure	2,000 ～ 3,500 psi			
	Typical film thickness	Min.1mm			
Storage	*The thicker the sound insulation effect is promoted				
Storage	Shelf life : 6months at 5 to 35℃				
	Store in dry,shaded conditions away from source of heat and ignition.				