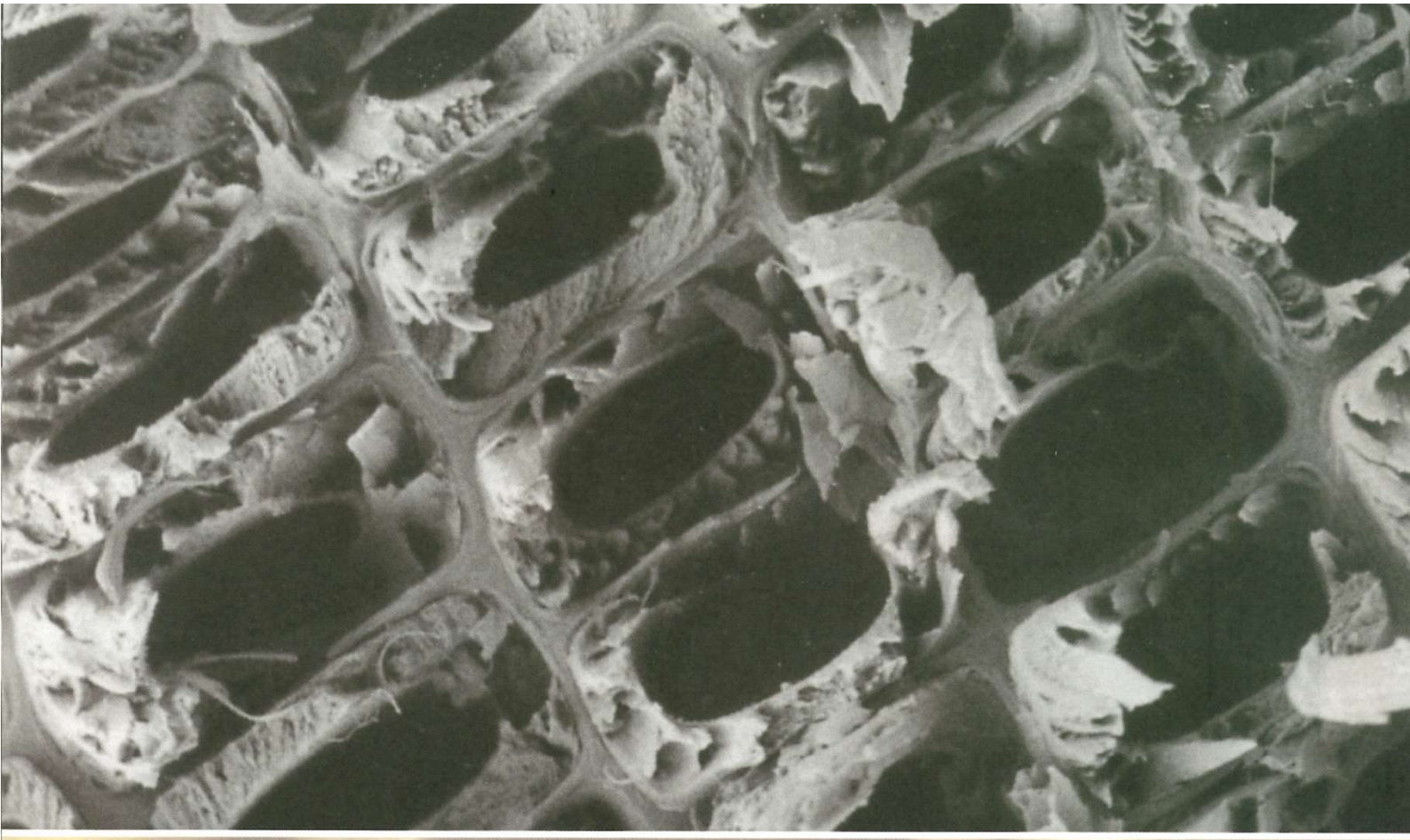


CELL-FUNEN Non-Combustible Lumber

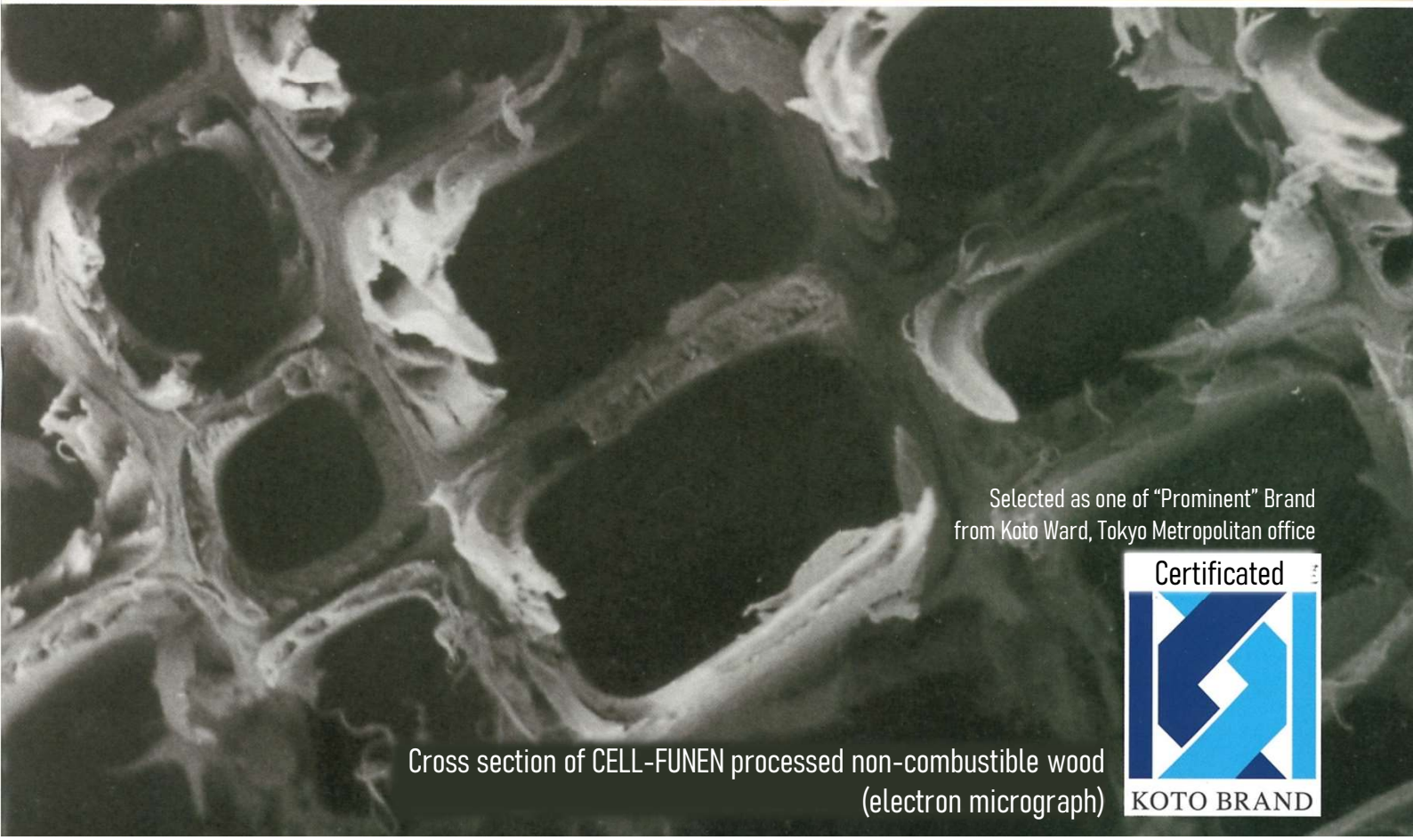
SUSANOH

"Susanoh"; Japanese Dragon Slayer in the Myth

Non-Combustible technology for saving lives, fortune, and environment from the fire disaster

CELL-FUNEN

ASANO FUNEN CO. LTD.



Selected as one of "Prominent" Brand from Koto Ward, Tokyo Metropolitan office

Certificated

KOTO BRAND

Cross section of CELL-FUNEN processed non-combustible wood (electron micrograph)

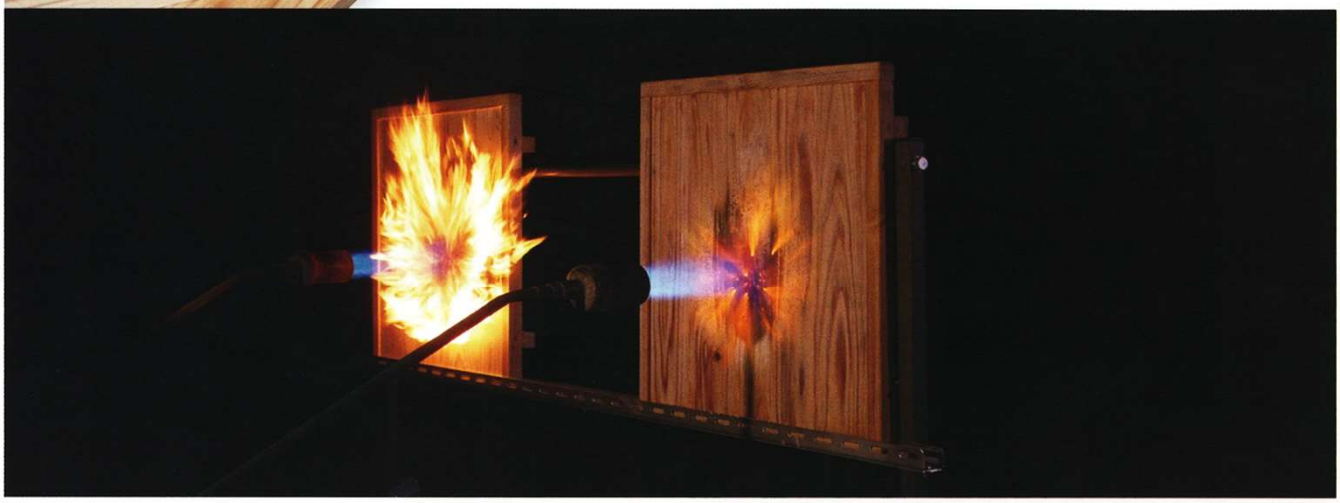
CELL-FUNEN Non-Combustible Lumber

SUSANOH

スサノヲ

Non-Combustible Lumber that does not burn even when hit by flame, and prevent hazardous smoke and gas.

Ministry of Land, Infrastructure, Transport, and Tourism (MLITT) certification of "Non-Combustible" & "Semi Non-Combustible" material
Japan Railway vehicle & machinery Association Certification for Non combustibility



4 Major Benefits of **SUSANOH**

Safety

Self-extinguishing without burning

The part that hits the flame turns red and carbonizes, but the flame does not rise and it does not spread.
The fire is extinguished as soon as it separates from the flame.

No harmful smoke or gas is emitted during evacuation

Even if it is hit by a flame, it emits almost no harmful smoke or gas and does not interfere with evacuation in the event of a fire.
＊Proven in gas toxic mouse experiments at the time of MLITT "non-combustible material" certification

Does not cause sick house syndrome

Since it does not use organic compounds (formaldehyde, etc.), it does not cause sick house syndrome.
＊From July 1, 2003, it is not subject to formaldehyde-emitting building materials regulated by the Building Standards Act.

Functionality

Antiseptic / Ant / Antifungal effect

Since the main component of the non-combustible treatment material is boric acid and borax, which are widely used overseas, high antiseptic and anti-termite effects can be expected.
＊The effect was also confirmed in an antifungal test at the Comprehensive Antibacterial Research Institute.

Increased strength

Increases bending strength and compressive strength

Improve the air environment with the negative Air Ion effect

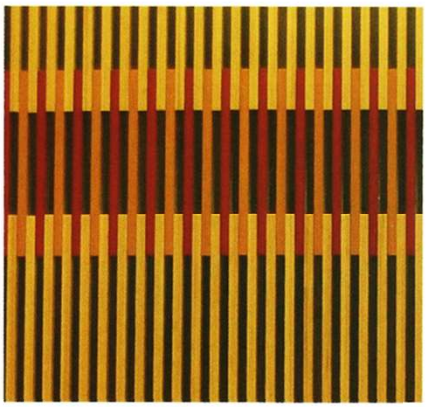
Wood has a higher negative air ion effect than other building materials, and non-combustible processed materials are even more effective for that purpose.

Major examples of **SUSANOH** appointment by clients

Fukui Prefecture Folklore Literature Library

Reception of company L Tokyo office

Fukui Children Medical Center



Narita International Airport
Terminal 1

Sustainability

Uses domestic thinned wood with few knots

As the raw material wood, it is difficult for the knots to be impregnated with the non-combustible treatment liquid, so we use wood with few knots.
It also increases the value of thinned wood and contributes to the promotion of effective use.

Carbonization

When exposed to flames, the surface of SUSANOH will carbonize and suppress the generation of CO2.
＊Approximately 50-80% reduction in carbon generation compared to untreated wood

Design

The natural wood grain, texture and scent remain the same

A relaxing effect on the grain of wood can be enjoyed, just like normal wood.

Variety of processing and painting variations

Corresponds to various designs by processing such as finishing and painting

Thorough quality control

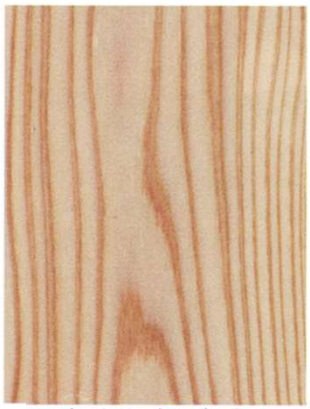
Non-combustible wood is a material related to human life and safety
Therefore, thorough quality control is required. In particular, since the raw material is natural wood and uneven, we perform strict non-destructive inspections on all products and ship only those that meet our standards.
It is a product that has acquired the "Association Recommended Certification No. 1" for quality control of non-combustible performance by the Urban Disaster Prevention and Non-combustible Association.

Quality control by putting BARCODE on products

SUSANOH Series

Solid plain woods

Painted woods



Unpainted (Cedar)

Unpainted (Cypress)

Urethane coated

Surface Processing Variation

Aging series: adding process & wax paint for creating the unique touch

Rough finish
Woodland Brown

Aged finish
Walnut

Washed finish
Teak

3D Non-combustible series: 3D processing with a hardwood-like expression / with paints exclusively chosen

Press type (Hemp)
CO Brown

Press type (Evening Calm)
CO Brown

Press type (Curved)
Milk

Press type (Willow)
CO Dark Brown

Curving type (Spoon)
CO Brown

Curving type (Waves)
CO Brown

Curving type (Rough)
Milk

Customized Curving types are also available

Painting Variation

Urethane Paints: Multiple luster finish can be chosen
(Mat/ 30% Gloss/ Half-gloss/ 70% Gloss/ Gloss)

Colors

Clear White Beige Burgundy Dark Brown Black

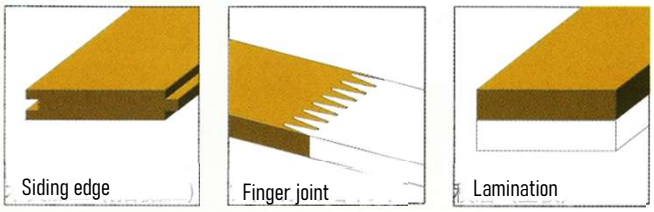
Ancient Series: Painting that brings out the taste of old wood, which dares to show the efflorescence peculiar to non-combustible wood (Brown wax finish)

Colors

White Walnut Teak Woodland Brown Cool Gray

Colors other than the standard lineup will also be available

Other Machinings



Specification of **SUSANOH** Lineup

Product Name	Certifiation Grade	Thickness (mm)	Width (mm)	Length (mm)
Cell-Funen Non-Combustible: Cedar -Unpainted	Non-Combustible	15	110 (*1)	1800 3000(*2)
Cell-Funen Non-Combustible: Cedar -Urethane Painted		18		
Cell-Funen Non-Combustible: Cedar -3D Machined		24		
Cell-Funen Non-Combustible: Cedar -Aging Series		18-24		
Cell-Funen Non-Combustible: Cypress -Unpainted		18		
Cell-Funen Non-Combustible: Cedar -Unpainted	Semi Non-Combustible	12		
Cell-Funen Non-Combustible: Cedar -Urethane Painted				

* 1 The effective width of non-combustible wood is 110 mm.
* 2 Please contact us in advance for the length.
3D non-combustible wood up to 2000 mm.

- We can handle special shapes and dimensions by processing standard products.
- Please contact us regarding the treatment of chemicals for the materials bringing in.
- Both Cedar and Hinoki are manufactured on a plain wood surface.
- Specifications are subject to change without notice.

List of National Certification

＊MLITT "Non-Combustible Material" certification

Cedar	NM-0168	24mm thick	
Cedar	NM-0692	18-50mm thick	
Cedar	NM-3839	15-24mm thick	2 Faces Urethane painted
Cedar	NM-3840	15-24mm thick	1 Face Urethane painted
Cedar	NM-3841	15-24mm thick	Unpainted
Cedar PLY	NM-4252	30-50mm thick	(1) 2 Faces Urethane painted (2) Unpainted
Cypress	NM-0761	18-50mm thick	
Red Pine	NM-0762	18-50mm thick	

＊MLITT "Semi-Non-Combustible Material" certification

Cedar	QM-0775	12-15mm thick	2 Faces Urethane painted
Cedar	QM-0776	12-15mm thick	1 Face Urethane painted
Cedar	QM-0777	12-15mm thick	Unpainted

＊Japan Railway vehicle & machinery Association Certification for Non combustibility

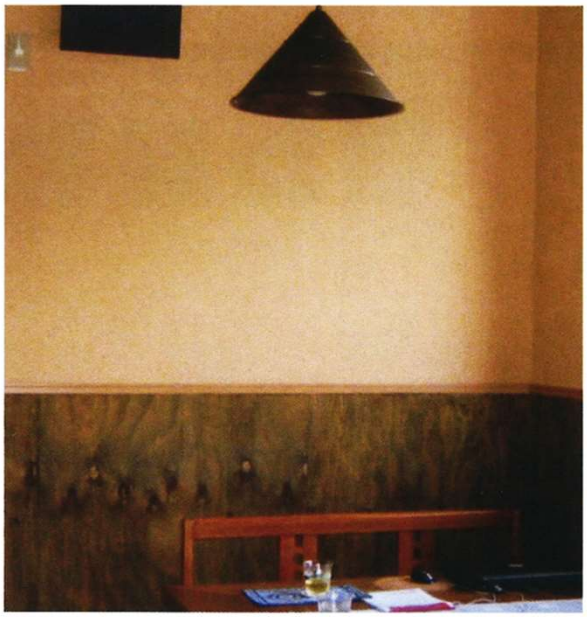
Dimension: Width 110mm X Length 3000mm

Handling Precautions

1. Because it is a natural material, the color, unevenness, and pattern will differ from one sheet to another.
2. Because it is made from natural wood, there may be some twisting, warping, and dimensional differences.
3. This product is for interior use. It is recommended to apply urethane coating when using.
4. It is recommended to store and use the product in a place that is well-ventilated and out of direct sunlight, avoiding high humidity.
5. This product weighs about twice as much as ordinary cedar wood, and the material is also hard. Be especially careful when transporting and working as the corners are easily damaged. Also, please note that when using tools (especially electric), the load will be higher than that of general wood. When attaching with nails, screws, etc., there is a risk of cracking, so make a guide hole with a drill etc. before proceeding.
6. Due to the nature of this product, the sawdust generated during processing will be fine powder, so be careful not to inhale it or get it in your eyes or ears during work.
7. Due to the nature of this product, the surface may appear white, but there is no abnormality in performance and quality. In that case, wipe it off with a cloth.
8. When disposing of this product, dispose of it as a combustible material if it is about the amount of household waste. If the amount is larger than that, please dispose of it according to the classification of each municipality.

CELL-FUNEN Non-Combustible **Wood Plaster Wall**

MLITT "Non-Combustible Material" certification NM-3138
(The base uses legal non-combustible materials except metal plates)



Nonflammable to help evacuation
Even in the event of a fire, it will not spread and will emit almost no harmful gas or smoke.

The warmth of wood
You can enjoy the texture of the material and the scent of wood, creating a soft atmosphere. (Uses domestic non-combustible cedar wood)

Antifungal, humidity control and deodorant effects
It has excellent properties to keep the room comfortable.

Standard Colors

Withered | White Gray | Ivory

Optional Colors

Wakanae | Kanzo | Vermilion | Kikuzin | Rikyu-nezu | White Blue | White Green | White Peach | White Yellow

Safety and Quality / Performance

Main Ingredients (weight %)	Test Items	Results	Judgement Source
Non-combustible Wood Flour: 90%	Air pollution (formaldehyde)	Not detected	upon JIS A 5905 test procedure
Starch adhesive: 10%	Antifungal property	Effect confirmed	upon JIS Z 2911 test procedure

Handling Precautions

1. Since it uses natural wood powder (domestic cedar), it has a woody scent. Please be careful if you are sensitive to scents
2. This product is for indoor use.
3. Avoid using in places where it is easily exposed to water or where it is humid (dressing room, kitchen sink area). It may cause peeling.
4. If there is a risk of rust such as nails, apply rust preventive.
5. Dry thoroughly after surface treatment
6. Apply lye / stain-preventing plaster to the entire surface of the base where lye / stain is likely to occur.
7. Stain may occur in the case of alkaline base
8. Avoid long-term storage of the kneaded material. Also, wash the tools you use with water as soon as possible.
9. The color may change due to sunlight or ultraviolet rays.
10. Avoid construction on a base that does not absorb moisture (glass surface, PVC cloth, etc.)
11. This product takes a long time to dry, so please improve the ventilation at the site.
12. If any scratches occur during construction, repair them immediately. It may cause color unevenness.
13. Be careful not to accidentally put it in your mouth or eyes. If swallowed or get in your eyes, wash thoroughly with water and see a doctor immediately.
14. Because it is a natural material, the color difference is remarkable depending on the lot. Please order the amount to be used at one time
15. Use non-combustible material (excluding metal plate), plaster board, calcium silicate board, gypsum lath board, etc. for the base material.

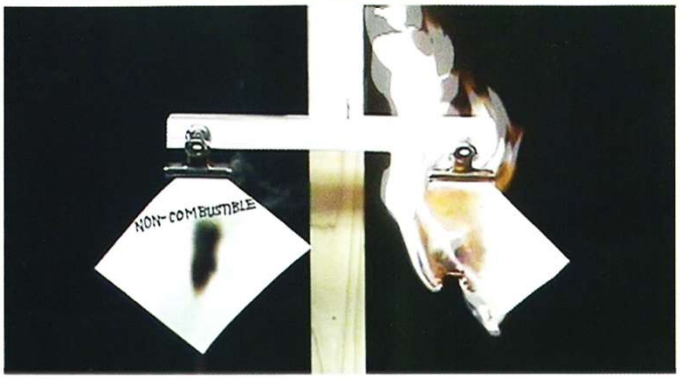
CELL-FUNEN Non-Combustible **Japanese Paper**

MLITT "Non-Combustible Material" certification NM-0996
(The base uses legal non-combustible materials except metal plates)

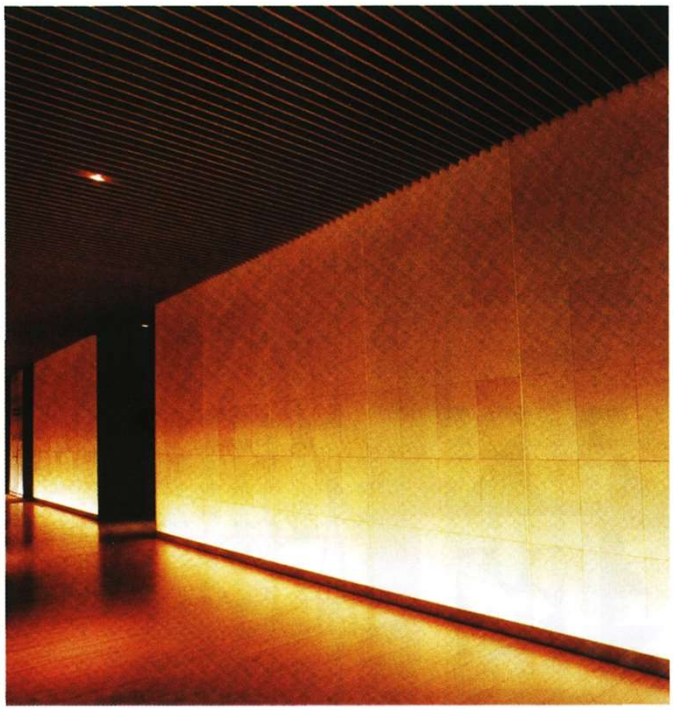
Non combustible treatment by post processing
It is possible to process your favorite Japanese paper incombustible.

Nonflammable, antifungal, insect repellent, antibacterial effect
It leaves the texture of Japanese paper and improves its function.

In addition to Japanese paper, non combustible treatment of shoji paper and bran paper is also possible.



Burning experiment of CELL-FUNEN Japanese paper (Left)



Adopted for Suntory Art Museum (Tokyo Roppongi)

CELL-FUNEN **Various Materials**

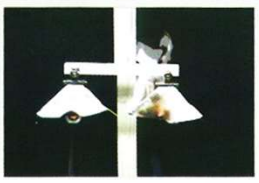
Technology that does not cause a fire even if equipment failure, material deterioration, or human error occurs

- Suppresses smoke and toxic gas that does not cause a fire
- In addition to the function of taking in moisture and self-extinguishing when fire heat is applied, the function of melting non-combustible components to prevent contact with oxygen, and the synergistic effect of both do not spread the fire without burning.
- The untreated material burns to ash, but by applying non-combustible treatment, the carbonized surface is coated with glass to suppress the generation of CO2.
- Reduces carbon generation by 50-80% compared to untreated carbon and immobilizes carbon

Burning experiments of CELL-FUNEN **Various Materials** (Left: processed)

Vinyl cloth

Tatami



Woven fiber

Urethane foam

Urethane polystyrene

Example of CELL-FUNEN Material adoption

Using the Non-Combustible Velvet material
Jewelry boutique in THE PENINSULA TOKYO hotel

Important Notice

* Our company's patents have been obtained internationally, including overseas.
* Please be careful about inferior similar products

CELL-FUNEN Non-Combustible Lumber SUSANOH: Cedar Performance

Item	Test standard	Performance	
Density	Our research	0.5-0.7 cm2	
Thermal conductivity	Rapid thermal conductivity meter (reference value)	Un-processed 0.1172 +/- 0.0039 Processed 0.1793 +/-0.0223	
Compressive strength	JIS Z 2101	Average 36.7N/mm2 Standard deviation 4.2	
Flexural strength	JIS Z 2102	Average 62.0N/mm2 Standard deviation 12.3	
Bending Young's modulus	JIS Z 2102	Average 9.27kN/mm2 Standard deviation 0.63	
Tensile strength	JIS Z 2103	Average 69.2N/mm2 Standard deviation 13.2	
Dimensional stability	Compliance to JIS A 1437	Appearance inspection Mass change rate Length change rate Width change rate Thickness change rate Bend Warp Width warp	No cracks due to the test Approx. 0.24% Approx. 0.02% Approx. 0.13% Approx. 0.40% Nil Nil No warp due to the test
Corrosion resistance	JIS K 1571	Nail mass reduction rate	Approx. 0.33%
Anti-weathering	Compliance to JIS K 5600-7-7 without wet cyle Outdoor exposure	Test duration: 500hours Test on going presently	
Combustion quality	According to the outdoor test center "Fire protection performance test / evaluation work method manual"	Heat generation Gas toxic	Incombustible Passed
Toxic	Compliance to OECD Guideline	Acute oral toxicity (mouse) Acute transcutaneous toxicity (rat) Temporary skin irritation Eye irritation Mutagenicity Skin sensitization	No fatal case LD50 above 2000mg/lg Hypoallergenic Non-irritating material Negative Minimum sensitization induction concentration 50w/v%
Air pollution	JIS A 5905	Formaldehyde emission	Not detected
Antifungal property	JIS Z 2911	Effect comfirmed	

* Please note that the standard performance values may differ from the above due to improvements, etc. (as of 2015 March)

CELL-FUNEN

Asano Funen Co., Ltd.
(Non-Combustion)

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