# Versatile materials suitable used as base materials for all types of decorative panels.

### About MDF

The DAIKEN Group offers two types of MDF(Medium Density Fiberboard), Hardwood and Softwood types.

Hardwood Type Product Thickness: 2.5 to 21.0 mm

### **Excellent Dimensional Stability**

Little dimensional change and a low possibility of warping even under harsh environments (at high temperature and high humidity) allow wide use in cabinets, wooden fittings, etc.

### Superb Water Resistance

Little swelling in water or in humid environments allows use in window frames (sash frames), flooring baseboards, etc. that require resistance to water and moisture.

### Effective Utilization of Untapped Resources and Stable Raw Material Procurement

Taking advantage of our location in Malaysia, we utilize untapped resources such as residual wood pieces discharged from sawmills and plywood plants and also utilize plantation trees to





Softwood Type Product Thickness: 1.8 to 30.0 mm

### Light-colored Surface suitable for a variety of surface decoration

Laminating this MDF with a translucent sheet has little effect on the decoration surface. In direct printing masking coat process may be removed.

### **Smooth Surface**

Long wood fibers provide smooth surface suitable for lamination, coating, and other treatments.

### Effective Utilization of Untapped Resources and Stable Raw Material Procurement

One of our plants is located in New Zealand where planned-afforested radiata pine trees are abundantly available. Portions of the trees not suitable for sawing are used as the raw material of the MDF for stable raw material procurement.





### Application Examples

### [Construction Fittings]

- O Flooring material (Base material)
- O Surface material for counter tables, housing equipment, and flush doors
- Frame material
- (for opening frame, window frame, or door frame)
- O Ceiling cornice, baseboard, and parting edge
- $\bigcirc$  Counter top and ceiling board for bay windows

### [Kitchen and Bathroom Equipment]

- O Door, side/back plate, and shelf board of kitchen equipment
- O Top board, side/back plate, and shelf board of washstand

### [Office Equipment]

O Blackboard and partition

### [Furniture and Woodwork]

- O Door, side/top plate, or material of chest/shelf furniture
- O Front plate and panel of drawers
- O Door and panel decoration
- O Table top of legged furniture  $\bigcirc$  Dressing table, Buddhist altar fittings, and corner furniture
- O Bed head/foot board
- $\bigcirc$  Interior accessory (doll case, picture frame, or box)

### [Entertainment Equipment]

 $\bigcirc$  Front/side plate, shelf board, panel of electronic musical instrument

### [Electric and Acoustic Equipment]

- O Loudspeaker box and rack
- O Table top, legs, and modesty panel of furniture-style Kotatsu





Dressing table



Kotatsu









TV rack Front and side plates of ctronic musical equipment etc.

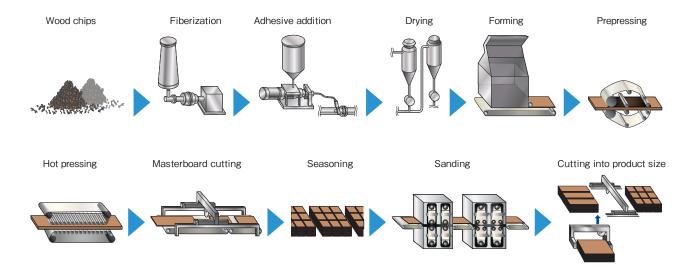
### **DAIKEN MDF Production Plants**

The DAIKEN Group has three MDF production plants in the world, two are located in Malaysia (one line each) and one is in New Zealand (two lines).



Tree type	Hard	wood	Softw	vood
Plant name	DAIKEN SARAWAK SDN. BHD.	DAIKEN MIRI SDN. BHD.	DAIKEN NEW ZEALAND LIMITED	
Abbreviation	DSK	DMR	DN	Z
Location	Sarawak, Malaysia		Rangiora, Ne	ew Zealand
Annual production capacity	120,000m <sup>3</sup>	110,000m³	Line 1: 100,000m <sup>3</sup>	Line 2: 110,000m <sup>3</sup>
Certifications	JIS A 5905 CARB ISO 9001 / 14001 PEFC CoC	JIS A 5905 CARB ISO 9001 / 14001	JIS A CA ISO 9001 FSC	RB / 14001
Investment ratio	DAIKEN CORPORATION 75% Local state government-related companies 25%	DAIKEN CORPORATION 70% Samling Group 30%	DAIKEN CORPO	PRATION 100%

### **DAIKEN MDF Production Processes Plan**



## MDF(Medium Density Fiberboard)

### Product Lineup - Standard Products (JIS Product)

Main raw material			Hardwood Softwood						
JIS	JIS class		Formaldehyde emission						
Adhesive Bending strength		F☆☆☆☆	F☆☆☆	F☆☆	F☆☆☆☆	F☆☆☆	F☆☆		
	Type 30	0	0	0	0	0	_		
Towns III	Type 25	0	0	0	0	0	0		
Type U	Type 15	_	_	_	0	0	_		
	Type 5	_	_	_	0	_	_		
	Type 30	0	0	0	_	_	_		
Type M	Type 25	0	0	0	_	_	_		
	Type 15	0	_	_	_	0	_		

### Quality Standards of Standard Products (JIS Product)

	110-		Density	Moisture content	Bending strength	Bending strength under wet condition	Swelling in thickness after immersion in water	Internal bond	Wood screw holding power	Formaldehyde emission	(informative) Bending Young's modulus
	JIS c	lass	g/cm³	%	N/mm²	N/mm²	%	N/mm²	N	mg/L	N/mm²
	Fជជជជ								Avg. 0.3 or under Max. 0.4 or under		
	Type 30	F☆☆☆			30.0 or over	_		0.5 or over	500 or over	Avg. 0.5 or under Max. 0.7 or under	2500 or over
		F☆☆								Avg. 1.5 or under Max. 2.1 or under	
		F☆☆☆☆								Avg. 0.3 or under Max. 0.4 or under	
Т у р е	Type 25	F☆☆☆			25.0 or over	_	-	0.4 or over	400 or over	Avg. 0.5 or under Max. 0.7 or under	2000 or over
U		F&&								Avg. 1.5 or under Max. 2.1 or under	
	Type 15	Fជជជជ		5 or over	15.0 or over	_		0.3 or over	300 or over	Avg. 0.3 or under Max. 0.4 or under	- 1300 or over
		F☆☆☆	0.35 or over		. 6.6 6. 6.6			0.0 01 0 01		Avg. 0.5 or under Max. 0.7 or under	
	Type 5	F☆☆☆☆	0.33 or over	up to and incl.13	5.0 or over	-		0.2 or over	200 or over	Avg. 0.3 or under Max. 0.4 or under	800 or over
		Fជជជជ								Avg. 0.3 or under Max. 0.4 or under	
	Type 30	F☆☆☆			30.0 or over	15.0 or over	• 17 or under for thickness	0.5 or over	500 or over	Avg. 0.5 or under Max. 0.7 or under	2500 or over
		F☆☆					7 mm or under			Avg. 1.5 or under Max. 2.1 or under	
T y		・12 or under for thickness over 7 mm up to an	thickness over 7 mm up to and			Avg. 0.3 or under Max. 0.4 or under					
р е М	p e Type 25	F☆☆☆			25.0 or over	12.5 or over	incl. 15 mm	0.4 or over	400 or over	Avg. 0.5 or under Max. 0.7 or under	2000 or over
		F&&					10 or under for thickness over 15 mm			Avg. 1.5 or under Max. 2.1 or under	
	Type 15	F☆☆☆☆			15 0 or over	7.5 or over		0.3 or over	300 or over	Avg. 0.3 or under Max. 0.4 or under	1300 or over
	1 ypc 13	F☆☆☆			15.0 or over 7.5	7.5 or over	0.	U.3 or over	300 or over	Avg. 0.5 or under Max. 0.7 or under	1300 or over

Wood screw holding power: Applicable to thickness of 15 mm or ov

### Product Lineup - Standard Products (Non-JIS Product)

Main raw	naterial	Hardwood	Softwood
CARR	P2	0	0
CARB	ULEF	_	0
EN	E1	0	0
EN	E2	0	0

<sup>\*</sup> The performance values and the certification labels are based on the Japanese test method and standards.

<sup>\*</sup> DAIKEN CORPORATION does not guarantee that the products listed here conform to the laws and regulations of the country or region where they are being used.

### Product Lineup (Custom Order)

Item	Main raw	material	Draduat avaus	Formaldahuda amiasian laval	Features	
iteiii	Hardwood	Softwood	Product group	Formaldehyde emission level	reatures	
Floor use	0	0	Thickness: 2.7 to 12 mm	JIS A 5905:F☆☆☆☆/F☆☆☆	High water resistance Industry-leading dimensional stability Resistance to floor waxes and cleaners	
Acacia 100%	0	_	Thickness: 2.5 to 6.0 mm	EN: E1/E2 JIS A 5905:F☆☆☆☆/F☆☆☆	Sustainable Acacia mangium (Plantation tree) fiber used 100% as raw material High bending strength First-class water resistance in MDF category Difficult to be deformed even at high temperature and high humidity	
Ultra-light board	_	0	Thickness: 7 mm or over Density (g/cm3): 0.3 to 0.6	CARB: P2/ULEF EN: E1/E2 JIS A 5905:F☆☆☆☆/F☆☆☆	Lightweight for easy handling and reduced distribution cost     Thermal insulation and sound absorption	
Ultra-thin board	_	0	Thickness: 1.8 mm	CARB: P2/ULEF EN: E1/E2 JIS A 5905:F☆☆☆☆/F☆☆☆	Unprecedentedly thin MDF     Suitable as surface material due to inherent surface texture of MDF	

### Plantation Activities

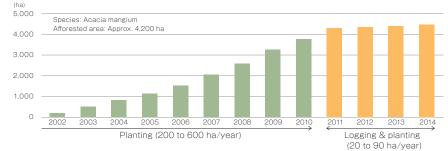


### **Environmental Protection**

The tree plantation area has reached 4,200 hectares or more.

which contributes to a fixed annual carbon dioxide absorption of approximately 200,000 tops

### ■Changes in Afforested Area (Cumulative Total)



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# DAIKEN Ceilings are chosen in buildings all over the world

DAIKEN Ceilings are made from selected mineral rockwool fibers and special binders. The mineral rockwool fibers uniformly interwoven by the unique wet-felting process to form DAIKEN Ceilings.

Because the DAIKEN Ceilings has porous properties with a low specific gravity. they exhibit efficient thermal insulation and sound absorption qualities,

while resisting sound transmission more effectively than glass fiber products.



DAIKEN makes ceiling from slag wool, a byproduct of iron manufacturing.



Slag is converted into mineral fibers, than the fibers are felted into DAIKEN Ceilings. Photo shows a piece of slag and mineral fibers.

### There are many good reasons to choose DAIKEN Ceilings

### Advantages to Users

### Fire Resistance

Thermal Insulation

Outstanding fire resistance helps contain fires.



### Sound Absorption

Adequately absorb the sound and create comfortable reverberant sound.



### Attractive Design

With design versatility, DAIKEN ceiling are attractive



### Advantages to Builders



### Easy installation and maintenance.

Most of DAIKEN Ceiling can be installed by the metal suspension system.



### No Ashestos contained

All DAIKEN Ceilings are Asbestos-free products.

### 0.23 Gypsum board 9.5mm 0.04

Thermal insulation performance is 6 times better than gypsum

board, and helps to minimize cost of air conditioning.

### Eco Labels (EXCELTONE MR only)

### **Environmental Choice Australia**

DAIKEN EXCELTONE (MR series) Acoustic Ceiling Tiles submitted for verification meet the GECA environmental performance criteria and that the products can successfully ain official registration as certified "Good Environmental Choice" products under the Australian Ecolabel Program.



0.2 (m̂·K)/W

### **Ecospecifier**

DAIKEN EXCELTONE (MR series) has been assessed and met the criteria for inclusion on ecospecifier.org. In addition, a Green Rate

Green Building Scheme Pre-Assessment has been conducted and found this products is likely to contribute to the achievement of Green Building rating tool credits.





### ISO:International Organization for Standardization [ISO 14001]

related to Environmental Management Systems [ISO 9001]

elated to Quality Management Systems (Registered Scope) http://www.jtccm.or.jp/

### EXCELTONE (MR series)



### Ceiling Board with outstanding humidity resistance (RH)

EXCELTONE(MR series)

EXCELTONE(MR series) HIGH NRC Board

PHYSICAL DATA SUMMARY
Representative data of EXCELTONE MR series 5/8" MN.

Physical Properties		Test Method
Moisture content	2%	JIS A 6301
Modulus of Rupture	17kgf/cm <sup>2</sup>	JIS A 6301
Fire Propagation Test	Class 0	B.S.476 Part 6
	Class A (0-25)	ASTM E84
Flome Careed	0	Australian Standards 1530.3
Flame Spread	20	UL723
	Class 1	B.S.476 Part 7
Thermal Conductivity	0.045kcal/mh°C	JIS A 1412
Light Reflectance	Over 0.80	ASTM E1477
Sound Absorption Coefficient(NRC)	0.55	ASTM C423
Ceiling Attenuation Class(CAC)	36	Australian Standards 2499 (TWO-ROOM METHOD)

JIS: Japanese Industrial Standard

### Data of EXCELTONE MR series 3/4"High NRC MC

Physical Properties	Test Method	
Flame Spread	Class A	ASTM E84
Light Reflectance	Over 0.80	ASTM E1477
Sound Absorption Coefficient(NRC)	0.75	ASTM C423
Ceiling Attenuation Class(CAC)	33	ASTM E1414

### **EXCELTONE** Antibacterial and deodorant treatment

### Anti-bacterium examination result

Bacteria	Specimen	Viable bacteria count /specimen (24hours later
	regular tile (non-Hospitone coating)	1.1×10 <sup>2</sup>
Escherichia coil (3.6×10 <sup>4</sup> )	Hospitone coating	<10
(0.0/10)	bacteria specimen	2.6×10 <sup>6</sup>
	regular tile (non-Hospitone coating)	7.8×10 <sup>6</sup>
Pseudomonas aeruginosa (4.5×10 <sup>4</sup> )	Hospitone coating	10
(4.5/(10))	bacteria specimen	2.2×10 <sup>6</sup>
MRSA mejishirin methicillin	regular tile (non-Hospitone coating)	10
resistant staphylococcus aurei	Hospitone coating	<10
(3.8×10 <sup>4</sup> )	bacteria specimen	1.2×10 <sup>6</sup>

Test Method : drop each bacteria on specimen and stock - culture 24 hours at 36°C and measure the bacteria count. Tested by Japan Food Research Laboratories.



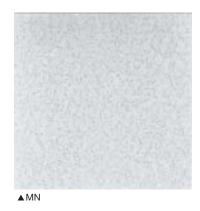


<sup>\*</sup> The performance values and the certification labels are based on the Japanese test method and standards.

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### **EXCELTONE (MR series)**













MA *1	
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▲MP \*1 **▲** MV **\*1** 

EXCELTONE MR series	Thickness (nominal)	Standard Size	Edge
Exposed Board	1/2", 5/8"	24" x 24" (o.c.) 24" x 48" (o.c.) 600 x 600mm (o.c.) 600 x 1,200mm (o.c.)	4 sides: Trimmed.
Semi-concealed Tile	15mm	400 x 1,500mm 500 x 1,500mm	Long sides: Kerf and rabbet, Square edges.  Short sides: Trimmed.
Shiplap Tile	15mm	400 x 1,500mm 500 x 1,500mm	Long sides: Shiplap, bevel edges. Short sides: Trimmed.
Reveal Tile	5/8″	24" x 24" (o.c.) 24" x 48" (o.c.) 600 x 600mm (o.c.) 600 x 1,200mm (o.c.)	4 sides: Revealed, Square edges.
Hovodi Hie	13mm	24" x 24" (o.c.) 24" x 48" (o.c.) 600 x 600mm (o.c.) 600 x 1,200mm (o.c.)	4 sides: Revealed, square edges.
Slim-line Tile	5/8″ 13mm	24" x 24" (o.c.) 24" x 48" (o.c.) 600 x 600mm (o.c.) 600 x 1,200mm (o.c.)	4 sides: Slim-line revealed, square edges.

<sup>\*1</sup> MC, MA, MP and MV pattern has no square edge Semi-Concealed Tile.

<sup>\*</sup> The performance values and the certification labels are based on the Japanese test method and standards.

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▲ MLC-20MN

▲ MLC-40MN

EXCELTONE MR series	Thickness (nominal)	Standard Size	Edge
Reveal Tile	5/8″	24" x 24" (o.c.) 24" x 48" (o.c.) 600 x 600mm (o.c.) 600 x 1,200mm (o.c.)	4 sides: Revealed, square edges.









▲ MLC-9MN

▲ MLC-16MN

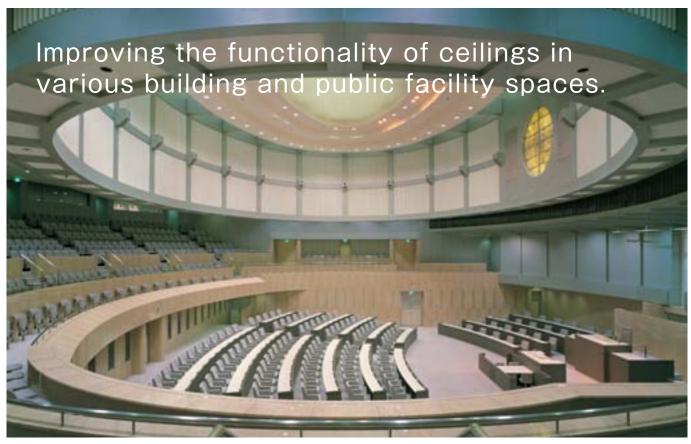
▲ MLC-64MN

▲ MLC-81MN

EXCELTONE MR series	Thickness (nominal)	Standard Size	Edge
Slim-line Tile	15mm	24" x 24" (o.c.) 600 x 600mm (o.c.)	4 sides: Slim-line revealed, square edges.

<sup>\*</sup> The performance values and the certification labels are based on the Japanese test method and standards.

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### **Decorative Acoustic Boards**

PN: <TRAVERTINE> (Joint width: 4 mm) 9 mm or 12 mm thick, 455 x 910 mm



(Joint width: 4 mm) 9 mm or 12 mm thick,



PN: <TRAVERTINE> (Joint width: 4 mm) 12 mm thick. 600 x 1200 mm



PN: <GRID 600> 12 mm thick 600 x 600 mm



12 mm thick, 600 x 600 mm



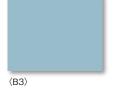




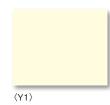


### **COLOR**









<sup>\*</sup> The performance values and the certification labels are based on the Japanese test method and standards.





RIHGA Royal Hotel (Osaka)

### **Decorative Acoustic Boards**

CURVED









### **SYSTEM CEILING**

GRID

<NDF/LG> 15 mm thick <LV> 12 mm thick



<NDF>



<LG>



**Indoor Pool Ceiling Materials MR** 

DAI-LOTONE MR

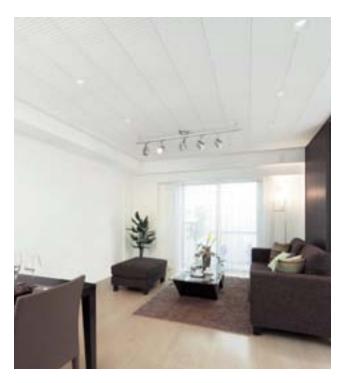
DAI-LOTONE MR 12 mm thick, 300 x 600 mm



DAIKEN's core products are presented here.

TA3 Residential Use Underlayment System Tongue & Groove Joint 12mm Thick Sound Absorption Coefficient: 0.45 to 0.53 (N.R.C)\* Direct Fix

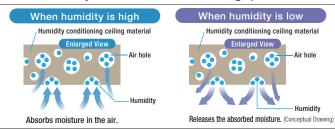
Combined with sound absorption capability to suppress disturbing reverberations, humidity conditioning maintains comfortable humidity in housing.



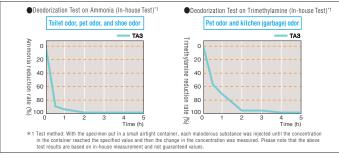
■ Labels Related to Public Certifications and Industrial Associations Formaldehyde Labeling Exempted Product 4VOC Standards Compliant

■Stable Humidity Condition deliver refreshing space

Low VOC Deodorant Humidity Conditioning



■Deodorizing Effect to eliminate Major Odors in Daily Life, Such as Toilet Odor, Garbage Odor, and Pet Odor



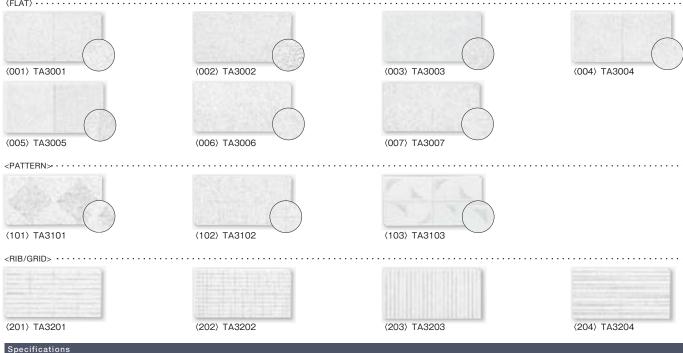
■This product may be installed on cloth type of wallpaper's wall at home, etc, depending on the design plan and side condition.

■Cross-sectional View The value in parentheses indicates the dimension on long sides

\*<FLAT> and <PATTERN> products are intended for installation on the entire ceiling and therefore have no striped.

(001~007/101~103)

(201~204)



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Dimensions 12 mm thick, 303 x 606 mm

Packing material, quantity ho Cardboard case, 18 pieces (3.3m³) per case Base material

Pinhole and rib processing (<201/202/203/204> only), Surface finish emboss, and acrylic emulsion coating

Edge processing  $\, \triangleright \,$ Tongue-and-groove joint on all sides

· Quasi-noncombustible material certified by the Minister of Land, Certifications Infrastructure, Transport and Tourism, QM-9817

- Eco Mark certified product (recycled materials used, 53% slag) No. 08123013
- · Humidity conditioning building material, registered product name "Healthy and comfortable ceiling material DAI-LOTONE" (Humidity conditioning rock wool acoustic board (12mm))

- Registration number: T08-0002 Registration agency: Japan Construction Material & Housing Equipment Industries Federation Formaldehyde regulations  $\triangleright$  Labeling exempted product
  - \* The performance values and the certification labels are based on the Japanese test method and standards.
  - \* DAIKEN CORPORATION does not guarantee that the products listed here conform to the laws and regulations of the country or region where they are being used.

TA4 Residential Use Underlayment System Direct Fix Tongue & Groove Joint 9mm Thick Sound Absorption Coefficient: 0.42 to 0.46 (N.R.C)\*

Sound absorption feature is to soften unpleasant household sounds and indoor noise for ease of listening to TV sound and human voices in large living rooms, etc.

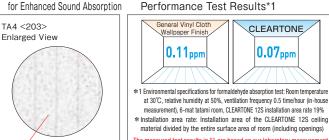


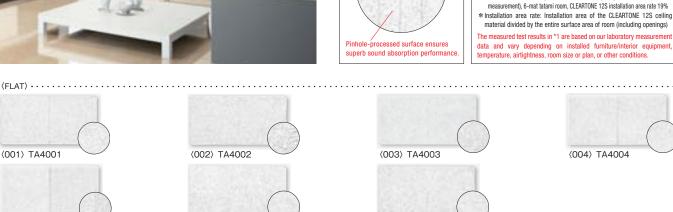
Low VOC

■ Sound Absorption Effect to Suppress Excessive Sound Reverberation for Ease of Listening to TV Sound and Human Voices

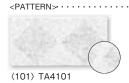


Pinhole-processed Surface Comparison of Formaldehyde Absorption for Enhanced Sound Absorption









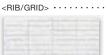
(005) TA4005



(006) TA4006



(007) TA4007









Dimensions 9 mm thick, 303 x 606 mm

Packing material, quantity ▷ Cardboard case, 18 pieces (3.3 m²) per case

Rock wool acoustic board Base material

 Pinhole and rib processing (<201/203> only), emboss (except for <201/203>), Surface finish and acrylic emulsion coating

Edge processing ▷ Tongue-and-groove joint on all sides

Certifications · Quasi-noncombustible material certified by the Minister of Land, Infrastructure, Transport and Tourism, QM-9817

Eco Mark certified product (recycled materials used, 53% slag) No. 08123013

Formaldehyde regulations  $\, \, \triangleright \,\,$  Labeling exempted product

■Cross-sectional View The value in parentheses indicates the dimension on long sides (001~007/101~103)





<sup>\*</sup> The performance values and the certification labels are based on the Japanese test method and standards.

<sup>\*</sup> DAIKEN CORPORATION does not guarantee that the products listed here conform to the laws and regulations of the country or region where they are being used.

TA7

Easy-to-clean. Just wipe the ceiling surface with neutral detergent, recommended for heavy kitchen user. TA7 features a refined geometric design.



■ Labels Related to Public Certifications and Industrial Associations Formaldehyde Labeling Exempted Product 4VOC Standards Compliant ■ Premium Features

Low VOC C PAIKEN ECO

Residential Use Underlayment System

■Recommended for heavy user ■Attractive Geometric Design to kitchen and Living Room Ceilings create stylish and beautiful ceiling.





Direct Fix Tongue&Groove Joint 12mm Thick

■This product can be installed on cloth type of wallpaper's wall at home, etc.

TA6

Residential Use Underlayment System

Direct Fix

Tongue&Groove Joint 9mm Thick

Easy-To Clean. Just wipe the ceiling surface with neutral detergent, recommended for heavy user in the kitchen etc.

TA6 features a simple design with reasonable price.









■Recommended for heavy user kitchen and Living Room Ceilings



■ Reasonably Priced Ceiling Material with a Simple Design

9 mm thick, 303 x 606 mm

Rock wool acoustic board

Packing material, quantity ho Cardboard case, 18 pieces (3.3m²) per case

Emboss.









### Specifications (TA7)

Dimensions 12 mm thick, 303 x 606 mm

Packing material, quantity  ${
ho}$  Cardboard case, 18 pieces (3.3m²) per case

Base material 

Surface finish Emboss, acrylic emulsion coating (clear pearl top coat)

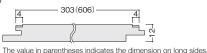
Edge processing ▷ Tongue-and-groove joint on all sides Certifications

Quasi-noncombustible material certified by the Minister of Land, Infrastructure, Transport and Tourism, QM-9817

• Eco Mark certified product (recycled materials used, 53% slag) No. 08123013

Formaldehyde regulations  $\triangleright$  Labeling exempted product

■Cross-sectional View



### Formaldehyde regulations ho Labeling exempted product

Specifications (TA6)

Base material

Surface finish

Certifications

Edge processing  $\triangleright$ 



Quasi-noncombustible material certified by the Minister of Land, Infrastructure, Transport and Tourism, QM-9817

Eco Mark certified product (recycled materials used, 53% slag) No. 08123013

acrylic emulsion coating (clear pearl top coat)

Tonque-and-groove joint on all sides

<sup>\*</sup> The performance values and the certification labels are based on the Japanese test method and standards

### Daiken Ceiling grid Construction Method for Buildings and Stores New Technology



Utilizing the know-how of installation method of ceiling system, DAIKEN has achieved both earthquake resistance and workability improvement.

After the Great East Japan Earthquake, the Japanese Building Standard Law was revised to require higher seismic performance for ceilings. However, there was a concern that fulfilling the demand with the conventional construction method would result in an increase in the construction workload. To address this issue, DAIKEN adopted a unique new ceiling construction method that can improve the seismic performance of ceilings in a short construction period with less workload.

This solution uses a ceiling underlayment material that combines the benefits of conventional ceilings with those of system ceilings.

Benefits of Conventional Ceiling Method Isable for buildings in a variety of application

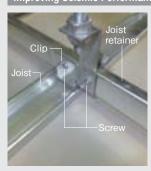
Benefits of New Ceiling Method · High rigidity through the use of grid ass

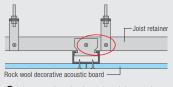


Earthquake resistance and workability improvement with comfortable indoor environment maintained

### Simplified Construction with Improved Safety

Improving Seismic Performance with Conventional Ceiling Method

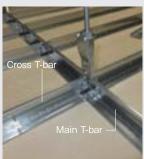




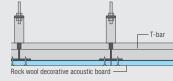
- Joists need to be bound to joist retainers using clips and reinforcing metal fittings.
- High-rigidity diagonal bracing corresponding to the unit weight of the ceiling needs to be installed.

3 to 4 times the conventional construction workload is needed

### **New Ceiling Construction Method**



\*Not applicable to some specific ceilings such as curved ceilings



Dedicated T-bars have tenon joints, so need not be fixed using screws.

Construction workload is reduced by approx. 20 to 30%, compared to when using conventional ceiling method to improve the seismic performance.

### **High Seismic Performance to Withstand** a Horizontal Load Equivalent to 2.2G.

Our new method showed a high seismic performance of 4,000 N with respect to the allowable ceiling proof stress in the "unit test" (static pressurization test) designated by the Ministry of Construction (the current Ministry of Land, Infrastructure, Transport and Tourism.(\*In-hou



Standards concerning Measures to Prevent the Fall of Ceilings in Buildings' ased on Notification No.771 of the Ministry of Land, Infrastructure, Transport and Tourism

### Improved Safety with Light-weight **Rock Wool Decorative Acoustic Boards**

It is proved in our laboratory test that our rock wool decorative acoustic boards have a low risk to human life in the event of falls.

■Dummy Head Test Result 3.500N 3,000N 2,500N Gypsum board 12.5mm 2,0001 1,500N 1.000N 500N Fall height (In-house test result in DAIKEN) Reference: Dummy Head Test

The impact force was measured by allowing each material to fall from the specified height It is considered that there is a low risk to human life if the impact force is 2,000 N or less

### One-push Underlayment Installation **Combined with Excellent Workability** to Realize a Short Construction Period

The new method contributes to the reduction of construction workload because the number of seismic braces is reduced.

Weight of Ceiling in Conventional Method 10~20kg/m

Weight of Ceiling in New Method

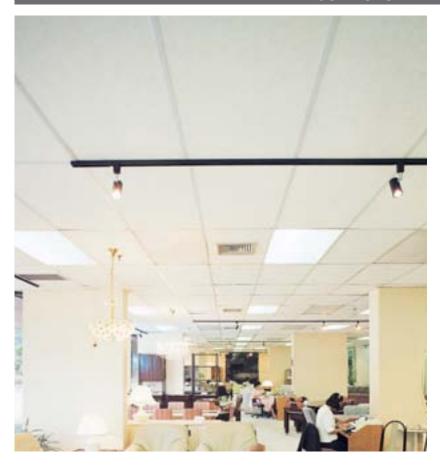
8kg/m

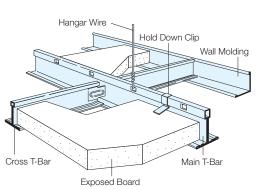
The above information relates to ceiling construction methods available in Japan. For their application to your country or other details, please contact our sales office

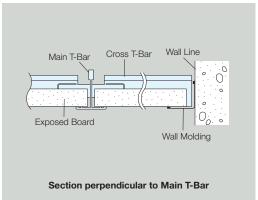
- \* The performance values and the certification labels are based on the Japanese test method and standards
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### Installation Guide

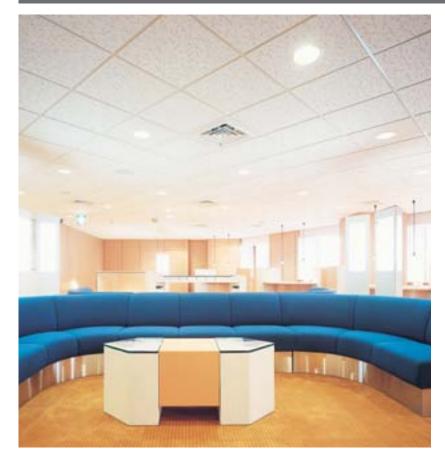
### EXPOSED SYSTEM

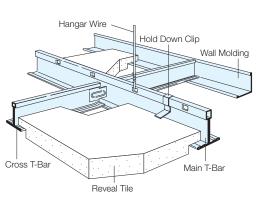


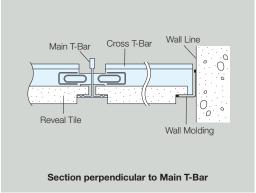




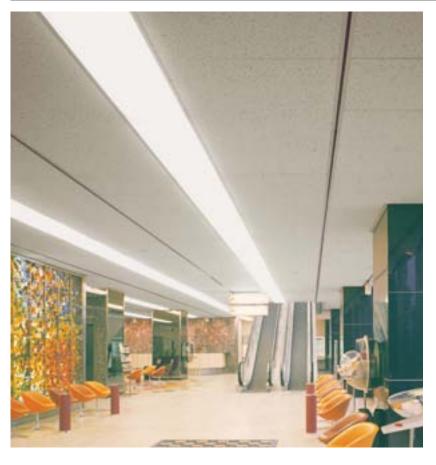
### **REVEALED SYSTEM**

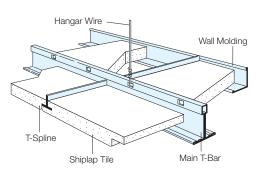


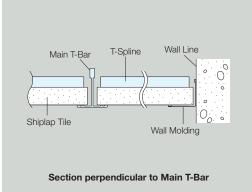




### SHIPLAP T-BAR SYSTEM

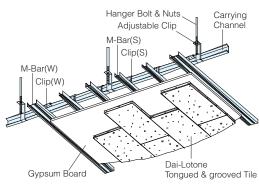


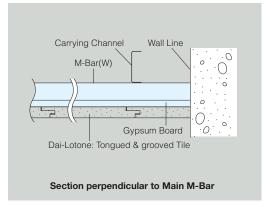


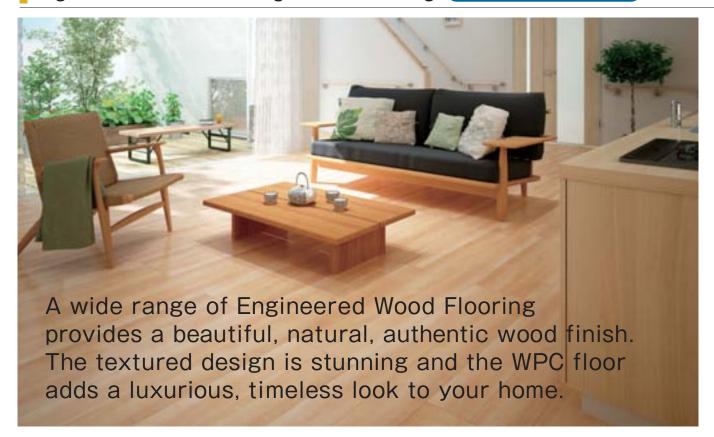


### Tongued & Grooved Tile









### WPC Engineered Wood Flooring

Excellent stain resistant Surface sealed WPC floors are stain and water resistant, durable and easy to maintain.

In daily life, it is inevitable that floors get stained over time. A key point to keep floors clean for a long time is to choose a flooring material with excellent stain-proof and wipeable features.





### Pet Friendly Flooring

Excellent stain-, scratch- and slip-resistant floor surface are ideal for your pets.

Besides being stain and scratch-resistant, Daiken WPC flooring has a slip resistance property so as to ensure safety of the kids, elderly and pets.



### Strong and Durable WPC flooring prevent your floor get scratches easily.

Choosing a flooring material with sufficient hardness and strength is essential to prevent scratching when you drop something on it



WPC flooring withstands the pressure of the wheels of a desk chair, or the impact of a dropped miniature car or building block. Falling Ball Impact Test Results



WPC Engineered Wood Flooring General Flooring Materia \*Do not use metal or ball caster wheels.

### WPC Treatment

WPC uses a combination of wood and a plastic resin filling to achieve outstanding hardness and dent resistance WPC also has a strong resistance to stains and water splashes. Therefore, WPC flooring is widely used for living rooms, bedrooms, children's rooms, and even kitchens and bathrooms.

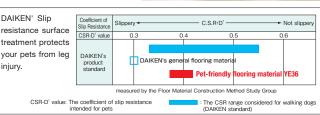


WPC Flooring Material Hard surface exhibits a strong resistance to dents and scratches.









Excellent scratch resistant coating to prevents the floor from dog scratching.



simple maintenance, and stain resistant.



### Eco Labels

F\dda

injury.

"4VOC Standards Compliant" is a label based on the industry's voluntary labeling system with respect to the emission of 4VOC (toluene, xylene, ethyl benzene, and styrene) from building materials, operated by the Japan Construction Material & Housing Equipment Industries Federation and other industrial associations. Although building material manufacturers conventionally used their own standards to indicate this, implementing the industry's common standards' helps customers choose products they need. From this reason, DAKEN is continuing to register its products with the "4VOC Standards Compliant "labeling system one after another."

\*In April 2008, standards with respect to the emission rate of VOC from building materials were established by the "Committee for standardization of emission rate of VOC from building products" (operated by Japan Testing Center for Construction Materials).

- \* The performance values and the certification labels are based on the Japanese test method and standards.
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- 27 \* The above flooring materials are not designed for use with shoes on.

YP76

For Residential Use Underlayment System Slipper Uses 12 mm Thick Surface Material WPC (Natural Wood) Matte

Beautiful and elegance Japanese Wood Surface with premium quality of WPC engineered flooring are resistant to dent, scratches, moisture and stains.

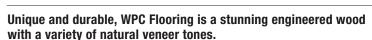
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YP76-NSK
YP76-NTK

12 mm Thick

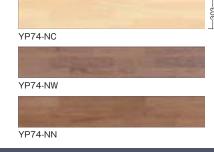
Specifications							
Dimensions		12 mm thick, 145 x 1,818 mm	■Plai	n View		Cros	s-sectional View
Packing material, quantity Package weight		Cardboard case, 6 pieces (1.58 m²) per case Approx. 14 kg/package		1,818 Horizontal	VR grooving		145
Base material Surface		Plywood with W hard base		))	Tit grooting	5	72
Edge processing		WPC treatment, natural wood (cedar/horse chestnut) thick single plate (approx. 2.0 mm), UV antimicrobial wear-resistant matte coating finish Tongue-and-groove joint on all sides, horizontal VR grooving, round chamfering on long sides and VR chamfering on short sides	4	chamfering Rou	ınd chamfering		- WPC decorative plywood single plate
Formaldehyde regulations	$\triangleright$	F4-rank JAS (Composite flooring)			ong sides		W hard base







For Residential Use Underlayment System Slipper Uses



F☆☆☆☆

■ Labels Related to Public Certifications and Industrial Associations

4VOC Standards Compliant

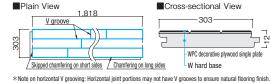
### Specifications

Edge processing

**YP74** 

WPC treatment, natural wood thin single plate, horse chestnut/chestnut/cedar/ginkgo/Japanese wingnut/Japanese walnut straight/cross grain mixed random length board, UV antimicrobial wear-resistant natural coating finish Tongue-and-grove joint on all sides, vertical & horizontal VR grooving (3P), chamfering on long sides and skipped chamfering on short sides

Formaldehyde regulations F4-rank JAS (Composite flooring)



YP62 For Residential Use Underlayment System Slipper Uses 12 mm Thick Surface Material WPC (Natural Wood) Mirror

Natural Japanese Wood by Daiken has an abundance of casual beauty. With strong graining highlighted by shades of honey, tan and cream, this flooring has comfortable style and universal appeal.





■Plain View



and Industrial Ass

■ Labels Related to Public Certifications

■Cross-sectional View

303

W hard base

WPC decorative plywood single plate

### Specifications

Dimensions  $\triangleright$  12 mm thick, 303 x 1,818 mm Packing material, quantity  $\triangleright$  Cardboard case, 6 pieces (3.3 m²) per case

Surface WPC treatment, natural wood thin single plate, beech/ash straight/cross grain mixed random length board,

UV antimicrobial wear-resistant superfine coating finish

Edge processing Deprocessing De

Formaldehyde regulations > F4-rank JAS (Composite flooring)

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- \* The above flooring materials are not designed for use with shoes on.

Engineered Wood Flooring - WPC Flooring/Special Proceed Laminate Flooring Made In Japan **YP68** For Residential Use Underlayment System Slipper Uses 12 mm Thick Labels Related to Public Certifications and Industrial Associations WPC treated surface protect that inhibits fading and scratching, giving your new floors a hearty resilience for years to come. F☆☆☆☆ YP68-38 YP68-35 YP68-39 YP68-21 Specifications ■Plain View 12 mm thick, 303 x 1,818 mm ■Cross-sectional View Packing material, quantity Cardboard case, 6 pieces (3.3 m²) per case Package weight Approx. 30 kg/package V groove Base material Plywood with W hard base Surface WPC treatment, natural wood thin single plate, beech/ash straight/cross grain mixed random length board, UV antimicrobial wear-resistant matte coating finish WPC decorative plywood single plate Edge processing Tongue-and-groove joint on all sides, vertical & horizontal VR grooving (3P), chamfering on long sides and skipped chamfering on short sides Skipped chamfering on short sides Chamfering on long sides W hard base Formaldehyde regulations > F4-rank JAS (Composite flooring) **YP77** For Residential Use Underlayment System 12 mm Thick Labels Related to Public Certifications Impressive matt finish surface beautifully crafted through ultra, realistic designs and the latest in innovative technologies. F&&&& 4VOC Standards Compliant (3P) (5P No Groove) YP7701-50 YP7702-50 YP7705-50 YP7701-13 YP7702-13 YP7705-13 YP7701-70 YP7702-70 YP7705-70 Specifications ■Plain View Dimensions D 12 mm thick, 303 x 1,818 mm (2P) Packing material, quantity  $\, \triangleright \,$  Cardboard case, 6 pieces (3.3 m²) per case V aroove V groove Package weight Approx. 30 kg/package Base material Plywood with W hard base WPC treatment, natural wood thin single plate, hard maple/ cherry/walnut straight/cross grain mixed random length board, Slight chamfering on short sides Chamfering on long sides /Skipped chamfering on short sides Chamfering on long sides Slight chamfering on all sides UV antimicrobial wear-resistant matte coating finish Cross-sectional View Edge processing Tongue-and-groove joint on all sides -303-(2P) Vertical & horizontal V grooving, chamfering on long sides and slight chamfering on short sides (3P) Vertical & horizontal V grooving, chamfering on long sides and skipped chamfering on short sides (5P)No groove, slight chamfering on all sides WPC natural wood thin single plate WPC natural wood thin single plate WPC natural wood thin single plate Formaldehyde regulations > F4-rank JAS (Composite flooring) **YP75** For Residential Use Underlayment System Slipper Uses 12 mm Thick ■ Labels Related to Public Certifications The glossy surface with characteristic graining and beautiful pattern sets it apart, bringing a wonderfully unique look to your home. YP75-YC YP75-ML YP75-MT YP75-MW YP75-MF

### Specifications

D 12 mm thick, 303 x 1,818 mm Packing material, quantity Cardboard case, 6 pieces (3.3 m²) per case Package weight Approx. 30 kg/package Base material

Formaldehyde regulations F4-rank JAS (Composite flooring)

Plywood with W hard base (YC/MT/MF) WPC treatment, natural wood thin single plate, ash straight/cross grain mixed random length board, UV antimicrobial wear-resistant fine coating finish (ML/MW) WPC treatment, natural wood thin single plate, beech straight/cross grain mixed random length board, UV antimicrobial wear-resistant fine coating finish Dongue-and-groove joint on all sides, vertical & horizontal VR grooving (3P), chamfering on long sides and skipped chamfering on short sides W hard base on long sides

■Plain View

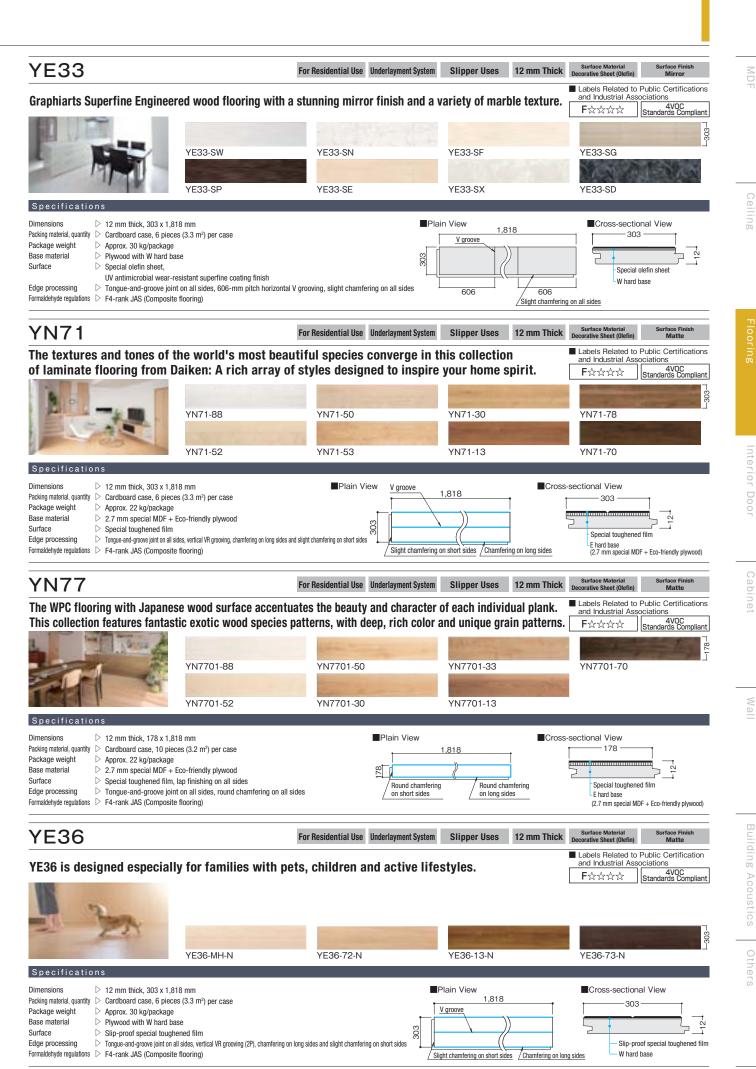
V groove

1,818

■Cross-sectional View

303

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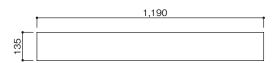
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YD75

For Residential Use Slipper Uses 15 mm Thick Surface Material Natural Wood

Made by engineered woord with higher janka hardness to prevent dent and scratch resistance to home traffic.

### ■Plain View







### YD75-21

### ■Eco-friendliness

Our healthy & Eco friendly engineered flooring met E0 standards is considered a safer, greener choice. E0 is an updated version of E1 with much more stringent standards requiring formaldehyde emissions to be equal to or less than 0.07ppm

### ■Performance

- 1. Strong crack, fade, and wear resistance Toughened surface coating ensures outstanding resistance to cracking, fading, and wear.
- 2. Single-plate crack prevention Unique chamfering technology prevents cracks on the single plate.
- 3. Floor heating ready

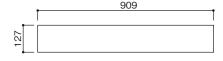
  Our products are all made of plywood with high thermal stability, causing no warping and cracking in a severe environmental test (at a temperature range of -20 to 90°C).

YD78 For Residential Use Slipper Uses 12 mm Thick Surface Material Wood

Unique uneven surface design delivers outstanding wood texture. DAIKEN's proprietary surface processing technology has realized this high-level surface treatment.

YD78 fits well with modern or basic interior design.

### ■Plain View









<sup>\*</sup> DAIKEN CORPORATION does not guarantee that the products listed here conform to the laws and regulations of the country or region where they are being used.