MDF(Medium Density Fiberboard)

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 stably procure raw materials.


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

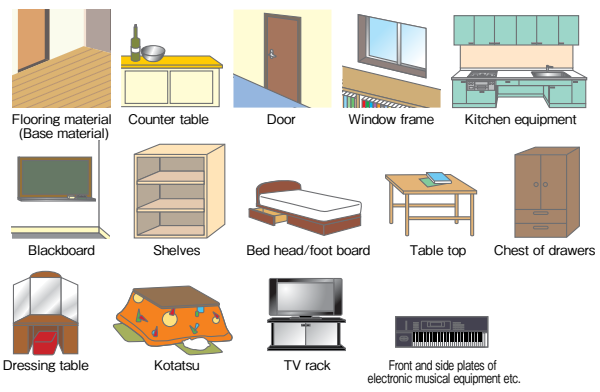
【Kitchen and Bathroom Equipment】
- ○ Door, side/back plate, and shelf board of kitchen equipment
- ○ Top board, side/back plate, and shelf board of washstand

【Office Equipment】
- ○ Blackboard and partition

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

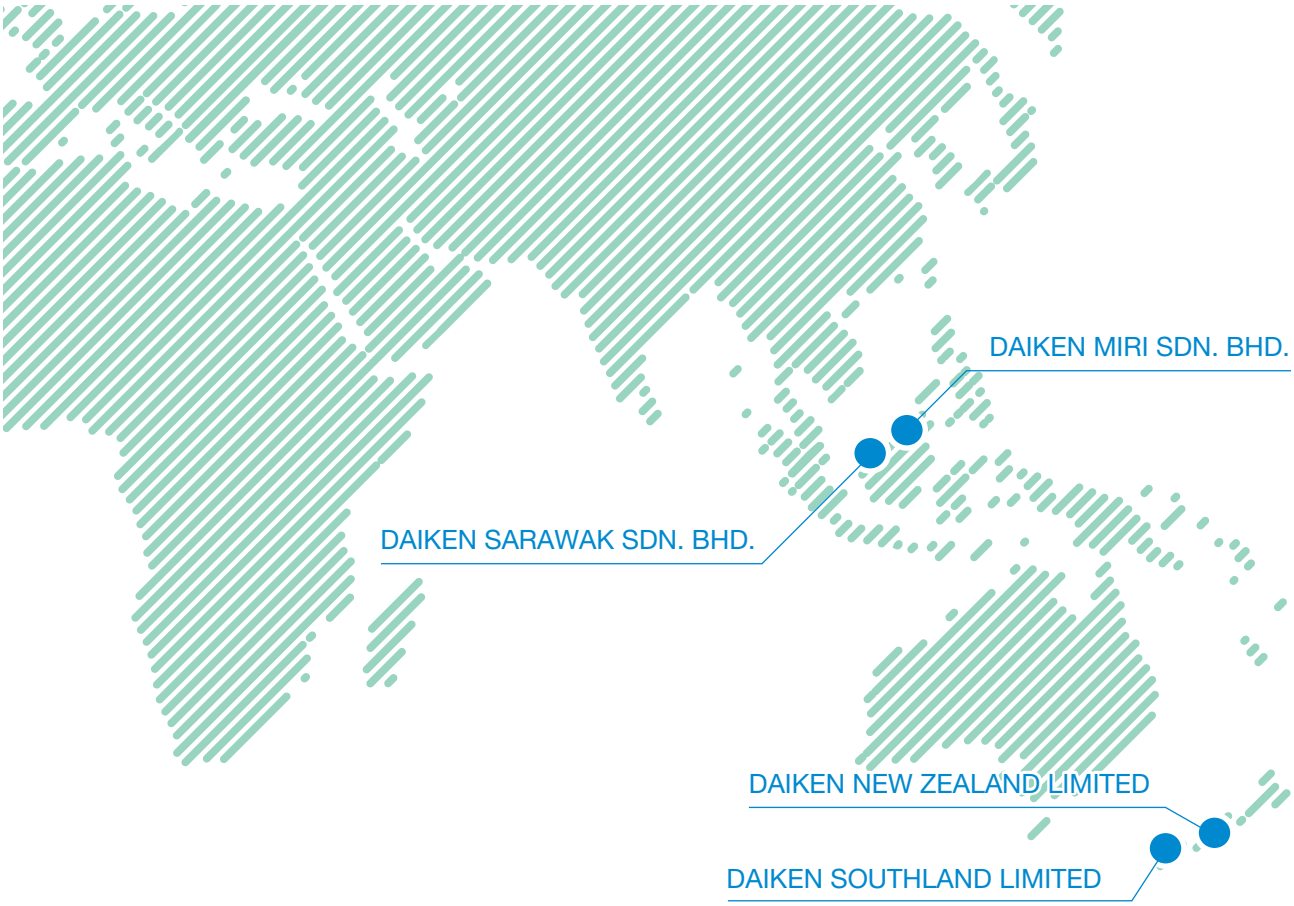
【Entertainment Equipment】
- ○ Front/side plate, shelf board, panel of electronic musical instrument

【Electric and Acoustic Equipment】
- ○ Loudspeaker box and rack
- ○ Table top, legs, and modesty panel of furniture-style Kotatsu (Japanese foot warmer table)



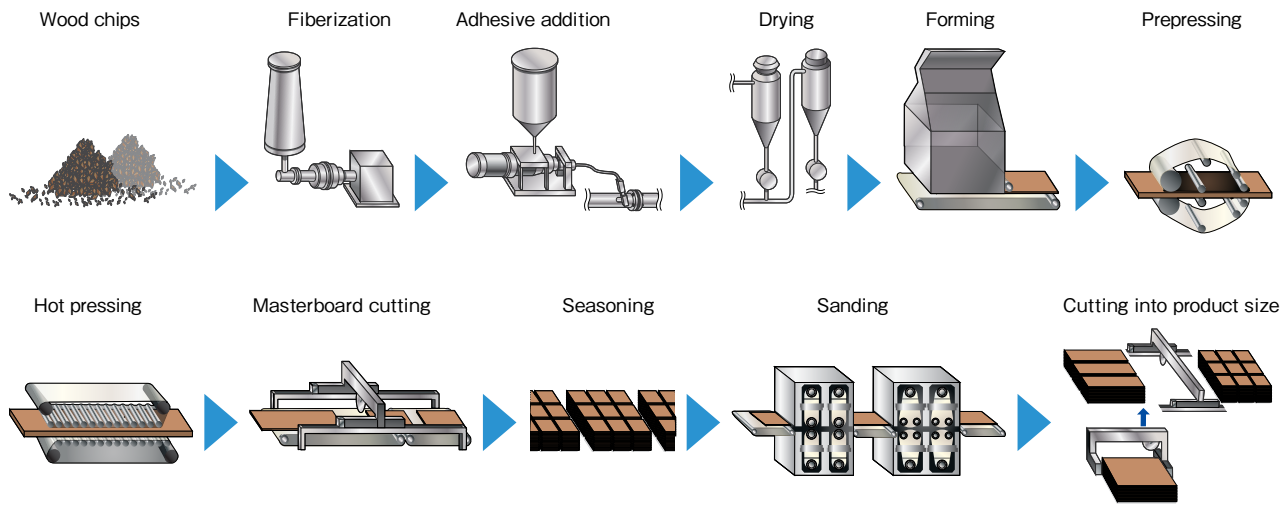
DAIKEN MDF Production Plants

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



Tree type	Hardwood		Softwood	
Plant name	DAIKEN SARAWAK SDN. BHD.	DAIKEN MIRI SDN. BHD.	DAIKEN NEW ZEALAND LIMITED	
Abbreviation	DSK	DMR	DNZ	
Location	Sarawak, Malaysia		Rangiora, New Zealand	
Annual production capacity	120,000m³	110,000m³	Line 1 : 100,000m³	Line 2 : 110,000m³
Certifications	JIS A 5905 CARB ISO 9001 / 14001 PEFC CoC	JIS A 5905 CARB ISO 9001 / 14001	JIS A 5905 CARB ISO 9001 / 14001 FSC CoC	
Investment ratio	DAIKEN CORPORATION 75% Local state government-related companies 25%	DAIKEN CORPORATION 70% Samling Group 30%	DAIKEN CORPORATION 100%	

DAIKEN MDF Production Processes Plan



MDF(Medium Density Fiberboard)

Product Lineup - Standard Products (JIS Product)

Main raw material		Hardwood			Softwood		
JIS class		Formaldehyde emission					
Adhesive	Bending strength	F☆☆☆☆	F☆☆☆	F☆☆	F☆☆☆☆	F☆☆☆	F☆☆
Type U	Type 30	○	○	○	○	○	–
	Type 25	○	○	○	○	○	○
	Type 15	–	–	–	○	○	–
	Type 5	–	–	–	○	–	–
Type M	Type 30	○	○	○	–	–	–
	Type 25	○	○	○	–	–	–
	Type 15	○	–	–	–	○	–

Quality Standards of Standard Products (JIS Product)

JIS class			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
			g/cm³	%	N/mm²	N/mm²	%	N/mm²	N	mg/L	N/mm²
Type U	Type 30	F☆☆☆☆	0.35 or over	5 or over up to and incl.13	30.0 or over	–	–	0.5 or over	500 or over	Avg. 0.3 or under Max. 0.4 or under	2500 or over
		F☆☆☆								Avg. 0.5 or under Max. 0.7 or under	
		F☆☆								Avg. 1.5 or under Max. 2.1 or under	
	Type 25	F☆☆☆☆			25.0 or over	–		0.4 or over	400 or over	Avg. 0.3 or under Max. 0.4 or under	2000 or over
		F☆☆☆								Avg. 0.5 or under Max. 0.7 or under	
		F☆☆								Avg. 1.5 or under Max. 2.1 or under	
	Type 15	F☆☆☆☆			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☆☆☆								Avg. 0.5 or under Max. 0.7 or under	
	Type 5	F☆☆☆☆			5.0 or over	–		0.2 or over	200 or over	Avg. 0.3 or under Max. 0.4 or under	800 or over
Type M	Type 30	F☆☆☆☆			30.0 or over	15.0 or over	・17 or under for thickness 7 mm or under ・12 or under for thickness over 7 mm up to and incl. 15 mm ・10 or under for thickness over 15 mm	0.5 or over	500 or over	Avg. 0.3 or under Max. 0.4 or under	2500 or over
		F☆☆☆								Avg. 0.5 or under Max. 0.7 or under	
		F☆☆								Avg. 1.5 or under Max. 2.1 or under	
	Type 25	F☆☆☆☆			25.0 or over	12.5 or over		0.4 or over	400 or over	Avg. 0.3 or under Max. 0.4 or under	2000 or over
		F☆☆☆								Avg. 0.5 or under Max. 0.7 or under	
		F☆☆								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
		F☆☆☆								Avg. 0.5 or under Max. 0.7 or under	

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

Product Lineup - Standard Products (Non-JIS Product)

Main raw material		Hardwood	Softwood
CARB	P2	○	○
	ULEF	–	○
EN	E1	○	○
	E2	○	○

＊ The performance values and the certification labels are based on the Japanese test method and standards.
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Product Lineup (Custom Order)

Item	Main raw material		Product group	Formaldehyde emission level	Features
	Hardwood	Softwood			
Floor use	○	○	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%	○	–	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	–	○	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	–	○	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 tons.

■Changes in Afforested Area (Cumulative Total)

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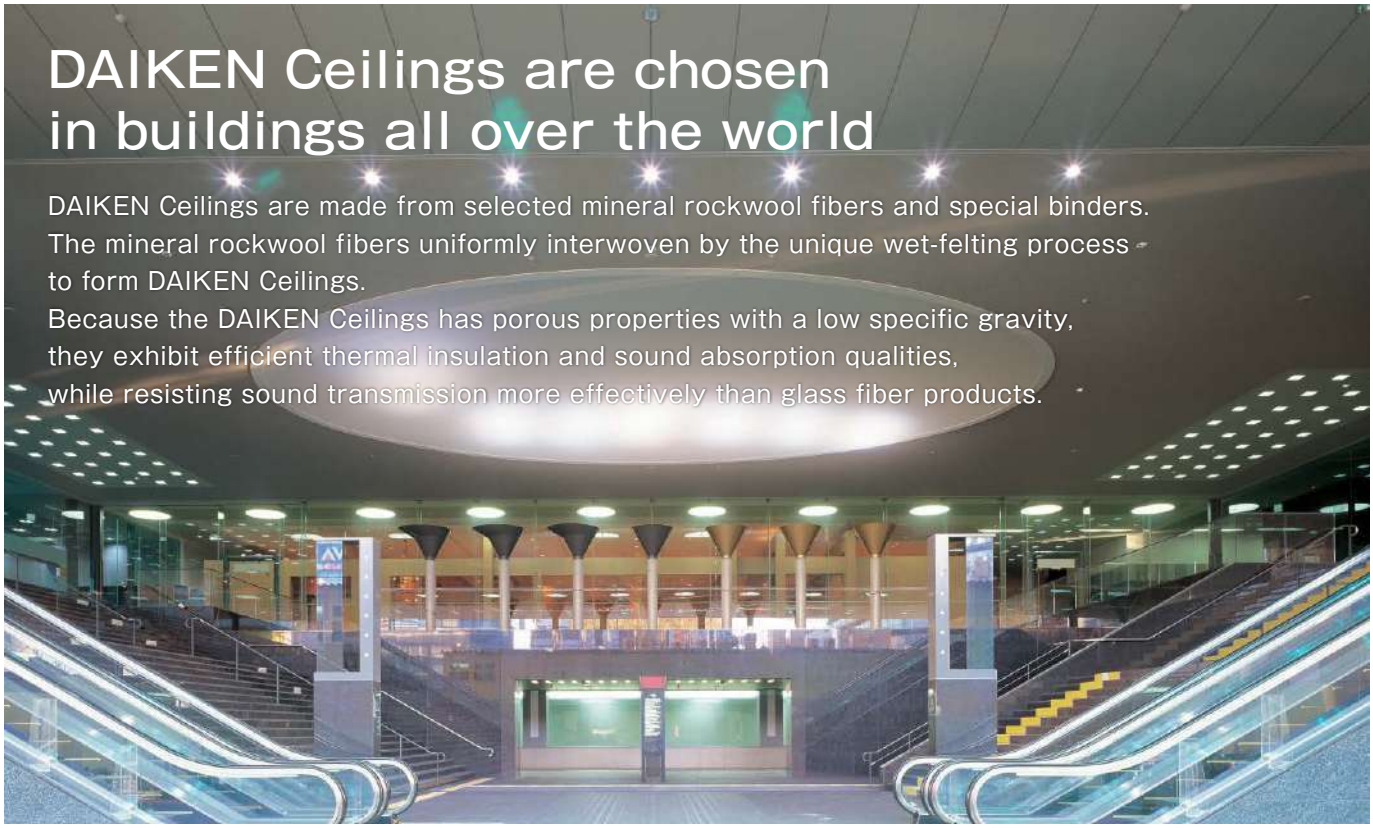
Acoustic Mineral Fiber Ceiling

Made In Japan



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.

JR Kyoto station,Kyoto,Japan

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

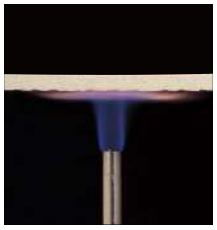
Slag is converted into mineral fibers, than the fibers are felted into DAIKEN Ceilings. Photo shows a piece of slag and mineral fibers.

There are many good reasons to choose DAIKEN Ceilings

Advantages to Users

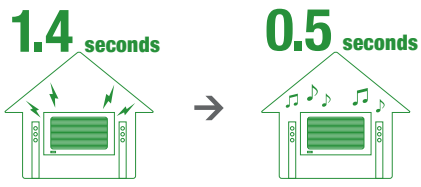
Fire Resistance

Outstanding fire resistance helps contain fires.



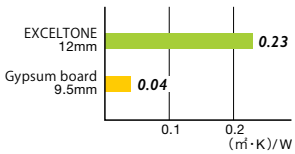
Sound Absorption

Adequately absorb the sound and create comfortable reverberant sound.



Thermal Insulation

Thermal insulation performance is 6 times better than gypsum board, and helps to minimize cost of air conditioning.



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 Asbestos contained
All DAIKEN Ceilings are Asbestos-free products.

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 gain official registration as certified "Good Environmental Choice" products under the Australian Ecolabel Program.

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

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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^2	JIS A 6301
Fire Propagation Test	Class 0	B.S.476 Part 6
Flame Spread	Class A (0-25)	ASTM E84
	0	Australian Standards 1530.3
	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)
Escherichia coil (3.6×10^4)	Regular tile (non-Hospitone coating)	1.1×10^2
	Hospitone coating	<10
	bacteria specimen	2.6×10^6
Pseudomonas aeruginosa (4.5×10^4)	Regular tile (non-Hospitone coating)	7.8×10^6
	Hospitone coating	10
	bacteria specimen	2.2×10^6
MRSA mejishirin methicillin resistant staphylococcus aurei (3.8×10^4)	Regular tile (non-Hospitone coating)	10
	Hospitone coating	<10
	bacteria specimen	1.2×10^6

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.

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Acoustic Mineral Fiber Ceiling

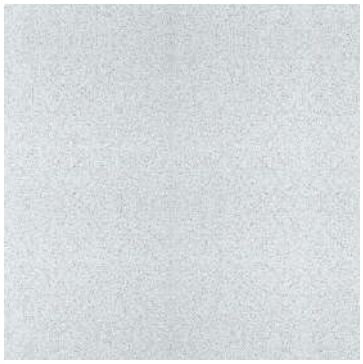
Made In Japan

EXCELTONE (MR series)


▲MD

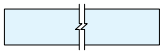
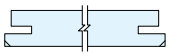
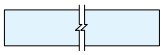
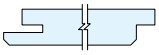
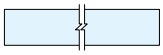
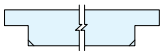
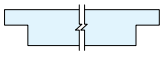
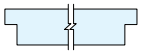

▲MN


▲MC ＊1


▲MA ＊1


▲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.
	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.

＊1 MC, MA, MP and MV pattern has no square edge Semi-Concealed Tile.

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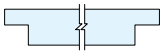
▲MLC-10N

▲MLC-20N

▲MLC-40N

▲MLC-41N

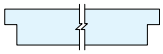
EXCELTONE MR series	Thickness (nominal)	Standard Size	Edge
Reveal Tile	5/8″	24″ x 24″ (o.c.) 24″ x 48″ (o.c.) 600 x 600mm (o.c.) 600 x 1,200mm (o.c.)	 4 sides: Revealed, square edges.

▲MLC-9N

▲MLC-16N

▲MLC-64N

▲MLC-81N

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.

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Acoustic Mineral Fiber Ceiling

Made In Japan

3/4 MS-NRC (RH 99)

Key Attributes

Features & Benefits:-

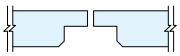
- Smooth and finely monolithic white face, with a very subtle smooth faced fibre textures.
- Clean monolithic look is an ideal aesthetic choice for many commercial interior space requirements.
- Outstanding Noise Reduction Coefficient (NRC) and Ceiling Attenuation Class (CAC) improving acoustical conditions in the room.
- Non-Asbestos

Applications:

- Hotels
- Educational Facilities
- Emergency Departments (EDs Hospitals)
- Auditoriums
- Conference Rooms
- Media Centres

Note: Ceiling installed within temperature of 0°C to 50°C and relative humidity up to 99%

Product Specification

EXCELTONE MR	Nominal Thickness	Standard Size	Edges	Grid option
Lay-in Board	3/4”	600mm x 600mm (O.C) 600mm x 1200mm (O.C)	 4 Sides: Trimmed	T24 FUT-24
Beveled Reveal Board	3/4”	600mm x 600mm (O.C)BR 600mm x 1200mm (O.C)BR	 4 Sides: Beveled Reveal	T24 FUT-24

PERFORMANCES

Moisture Content
2% - JIS A 6301

Flame Spread / Fire Resistance
US: Class A
Flame Spread 25 or under
BS 476 Part 6 & 7 : Class 0 / Class 1

Light Reflectance
0.80 & above

Sound Absorption Coefficient
3/4 : NRC 0.70

Guaranteed
10 years against visible sagging

Country Of Origin
Made In Japan

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Tokyo Metropolitan Government Building

Decorative Acoustic Boards

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

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

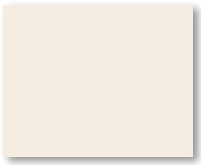
PN: <TRAVERTINE>
(Joint width: 4 mm)
12 mm thick,
600 x 1200 mm

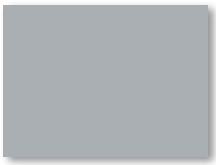
PN: <GRID 600>
12 mm thick,
600 x 600 mm

PN: <BEVEL 600>
12 mm thick,
600 x 600 mm

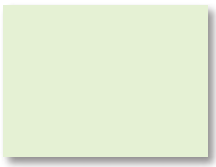
PN: <GINGA 4>
9 mm or 12 mm thick,
300 x 600 mm

COLOR


〈R1〉


〈N5〉


〈B3〉


〈G1〉


〈Y1〉

Decorative Acoustic Boards

CURVED

FREE DESIGN CEILING

SYSTEM CEILING

GRID

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


<NDF>


<LG>


<LV>

DAIKEN's core products are presented here.

* 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.

TA3

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

＊The sound absorption coefficient value is based on the laboratory measurement. Measurements in actual sites vary depending on the structure and conditions.

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

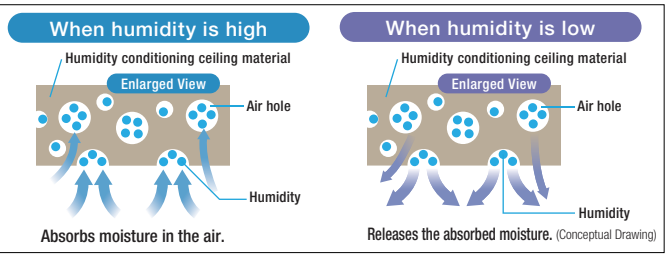
■ Labels Related to Public Certifications and Industrial Associations

Formaldehyde Labeling Exempted Product | 4VOC Standards Compliant | Quasi noncombustible

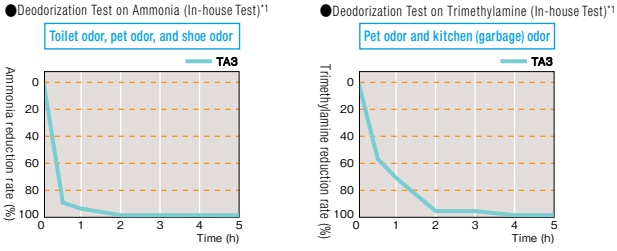
■ Premium Features

Low VOC | Deodorant | Humidity Conditioning | Formaldehyde Absorption

■Stable Humidity Condition deliver refreshing space



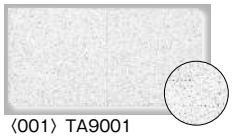
■Deodorizing Effect to eliminate Major Odors in Daily Life, Such as Toilet Odor, Garbage Odor, and Pet Odor

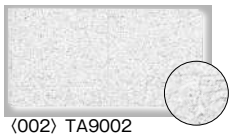


＊1 Test method With the specimen put in a small airtight container, each malodorous substance was injected until the concentration in the container reached the specified value and then the change in the concentration was measured Please note that the above test results are based on in house measurement and not guaranteed values

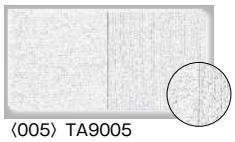
■This product may be installed on cloth type of wallpaper's wall at home, etc, depending on the design plan and side condition.

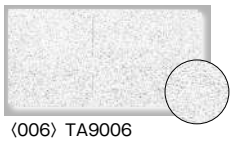
〈FLAT〉


〈001〉 TA9001


〈002〉 TA9002


〈003〉 TA9003

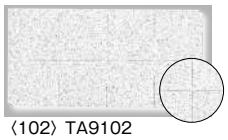

〈005〉 TA9005

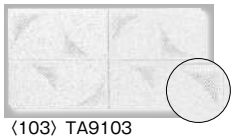

〈006〉 TA9006


〈007〉 TA9007

<PATTERN>


〈101〉 TA9101


〈102〉 TA9102


〈103〉 TA9103

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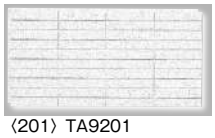
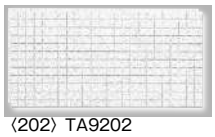
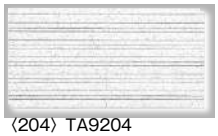

〈201〉 TA9201


〈202〉 TA9202


〈204〉 TA9204

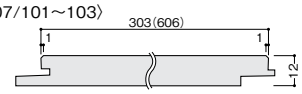
Specifications

Dimensions ▷ 12 mm thick, 303 x 606 mm
Packing material, quantity ▷ Cardboard case, 18 pieces (3.3㎡) per case
Base material ▷ Humidity conditioning rock wool acoustic board (12mm)
Surface finish ▷ Pinhole and rib processing (<201/202/204> only), emboss, 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
- 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 ▷ Labeling exempted product

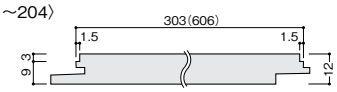
■Cross-sectional View The value in parentheses indicates the dimension on long sides.

〈001～007/101～103〉



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

〈201～204〉



＊ 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)*

* The sound absorption coefficient value is based on the laboratory measurement. Measurements in actual sites vary depending on the structure and cond tions.

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.

■ Labels Related to Public Certifications and Industrial Associations

Formaldehyde Labeling Exempted Product | 4VOC Standards Compliant | Quasi noncombustible

■ Premium Features

Low VOC | Formaldehyde Absorption | d DAIKEN ECO

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

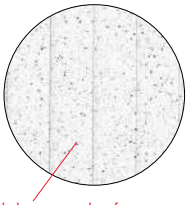
●Comparison of Reverberation Time Simulation Results (based on the sound absorption coefficient measurements on flooring)

When ceiling is finished with gypsum boards and vinyl cloth wallpaper
●Reverberation time: Approx. 1.4 s/500 Hz (in 20-mat tatami room)

When ceiling is finished with CLEARTONE
●Reverberation time: Approx. 0.6 s/500 Hz (in 20-mat tatami room)

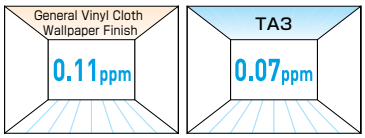
■ Pinhole-processed Surface for Enhanced Sound Absorption

TA4 <203>
Enlarged View



Pinhole-processed surface ensures superb sound absorption performance.

■ Comparison of Formaldehyde Absorption Performance Test Results*1

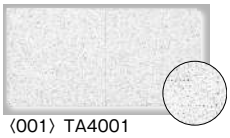


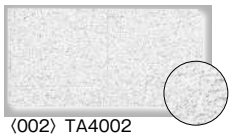
*1 Environmental specifications for formaldehyde absorption test: Room temperature at 30℃, relative humid ty at 50%, ventilation frequency 0.5 time/hour (in-house measurement), 6-mat tatami room, TA3 installation area rate 19%

* Installation area rate: Installation area of the TA3 ceiling material divided by the entire surface area of room (including openings)

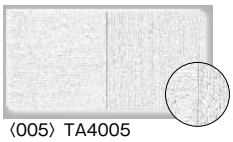
The measured test results in *1 are based on our laboratory measurement data and vary depending on installed furniture/interior equipment, temperature, airtightness, room size or plan, or other conditions.

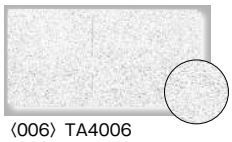
〈FLAT〉


〈001〉 TA4001


〈002〉 TA4002


〈003〉 TA4003


〈005〉 TA4005


〈006〉 TA4006


〈007〉 TA4007

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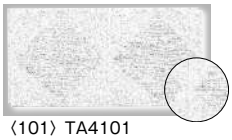
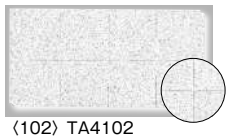
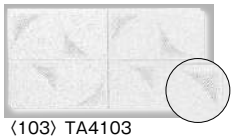

〈101〉 TA4101


〈102〉 TA4102


〈103〉 TA4103

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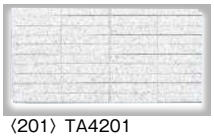

〈201〉 TA4201


〈203〉 TA4203

Specifications

Dimensions	▷	9 mm thick, 303 x 606 mm
Packing material, quantity	▷	Cardboard case, 18 pieces (3.3 m²) per case
Base material	▷	Rock wool acoustic board
Surface finish	▷	Pinhole and rib processing (<201/203> only), emboss (except for <201/203>), 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	▷	Labeling exempted product

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

〈001～007/101～103〉

〈201/203〉

* 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.

Eco Ceiling Made In Japan

TA7

Residential Use | Underlayment System | Direct Fix | Tongue&Groove Joint | 12mm Thick

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 | Quasi noncombustible

■ Premium Features

Low VOC | DAIKEN ECO

■Recommended for heavy user kitchen and Living Room Ceilings

Wipeable Ceiling Material

■Attractive Geometric Design to create stylish and beautiful ceiling.

■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.

■ Labels Related to Public Certifications and Industrial Associations

Formaldehyde Labeling Exempted Product | 4VOC Standards Compliant | Quasi noncombustible

■ Premium Features

Low VOC | DAIKEN ECO

■Recommended for heavy user kitchen and Living Room Ceilings

Wipeable Ceiling Material

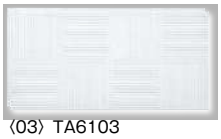
■Reasonably Priced Ceiling Material with a Simple Design

TA7

〈01〉 TA7101

〈02〉 TA7102

TA6



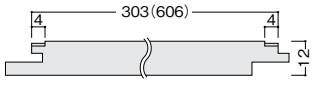
〈03〉 TA6103

〈04〉 TA6104

Specifications (TA7)

Dimensions	12 mm thick, 303 x 606 mm
Packing material, quantity	Cardboard case, 18 pieces (3.3㎡) per case
Base material	Rock wool acoustic board
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	Labeling exempted product

■Cross-sectional View

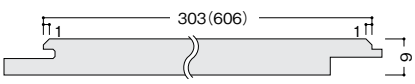


The value in parentheses indicates the dimension on long sides.

Specifications (TA6)

Dimensions	9 mm thick, 303 x 606 mm
Packing material, quantity	Cardboard case, 18 pieces (3.3㎡) per case
Base material	Rock wool acoustic board
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	Labeling exempted product

■Cross-sectional View

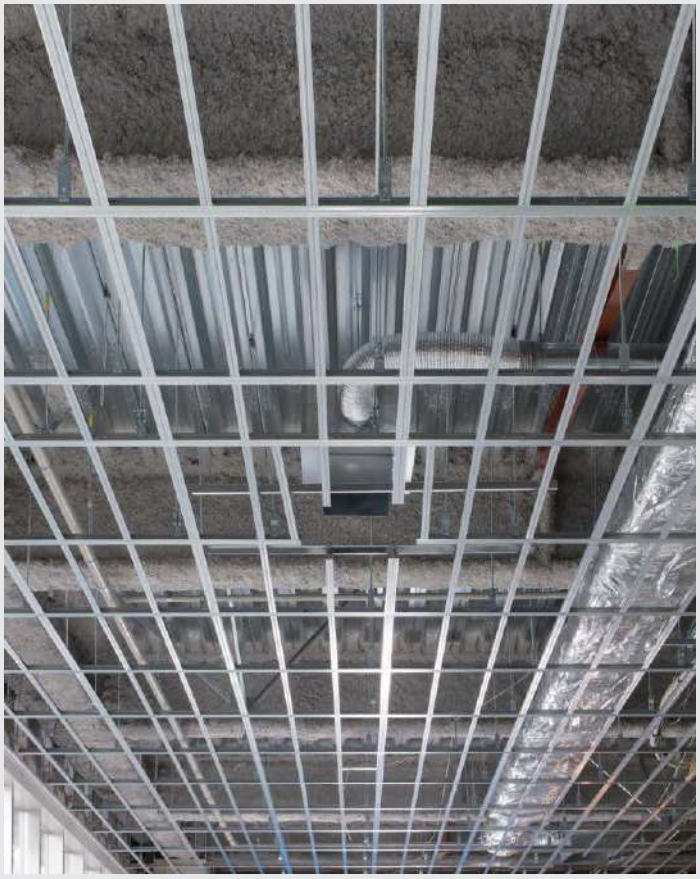


The value in parentheses indicates the dimension on long sides.

＊ 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.

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
- Flexible design
- Usable for buildings in a variety of applications

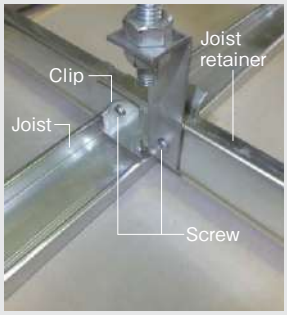
＋

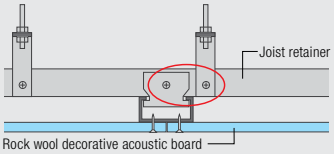
Benefits of New Ceiling Method
- High rigidity through the use of grid assembly
- Unitized design for less workload and shorter construction period

Earthquake resistance and workability improvement with comfortable indoor environment maintained

Simplified Construction with Improved Safety

Improving Seismic Performance with Conventional Ceiling Method

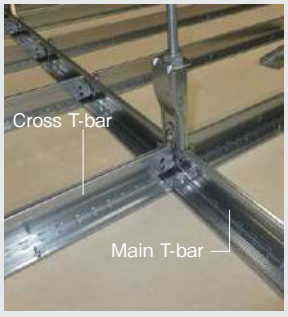




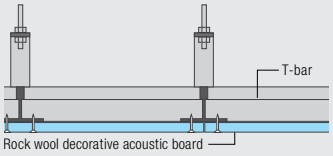
●Joists need to be bound to joist retainers using clips and reinforcing metal fittings.
●High-rigidity diagonal bracing corresponding to the unit weight of the ceiling needs to be installed.

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.

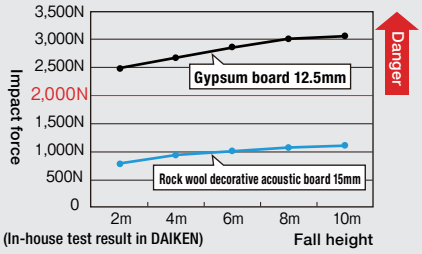
Our new method showed a high seismic performance of 4,000 N with respect to the allowable ceiling proof stress in the "unit test" (static pressurization test) designated by the Ministry of Construction (the current Ministry of Land, Infrastructure, Transport and Tourism.) (＊In-house test result)

＊Construction is performed in accordance with "Practical Guide on the Technical Standards concerning Measures to Prevent the Fall of Ceilings in Buildings" based 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



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/㎡
＊Total weight of materials under steel channels (Metal fittings + Underlayment + Finishing materials)

▼

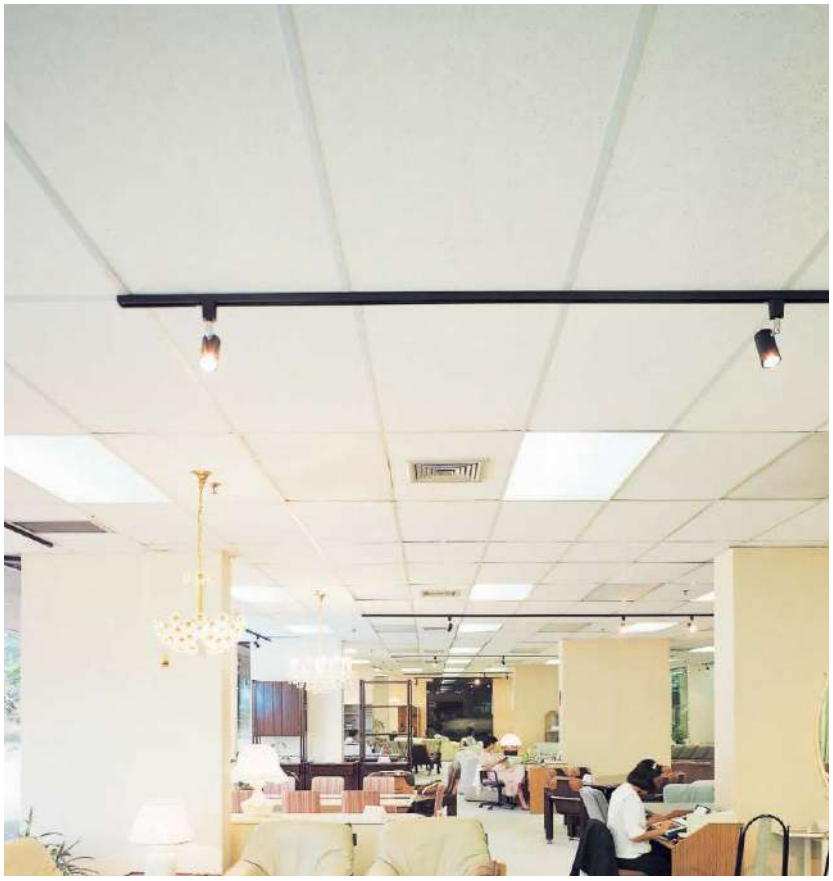
Weight of Ceiling in New Method
8kg/㎡
＊When using DIRECT GRID 600 (12mm)
＊Total weight of materials under dedicated T-bars (Metal fittings + Finishing materials)

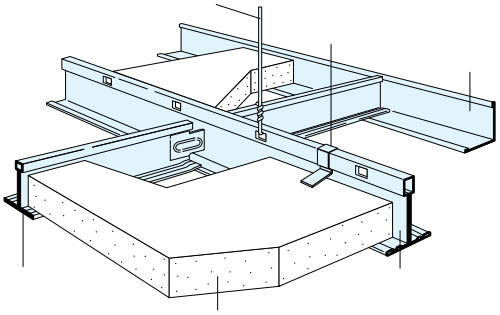
The above information relates to ceiling construction methods available in Japan. For their application to your country or other details, please contact our sales office.

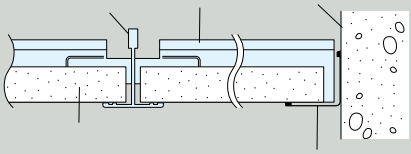
＊ The performance values and the certification labels are based on the Japanese test method and standards.
＊ DAIKEN CORPORATION does not guarantee that the products listed here conform to the laws and regulations of the country or region where they are being used.

Installation Guide

EXPOSED SYSTEM







REVEALED SYSTEM