DAIKEN Ceilings

DAIKEN CORPORATION

DAIKEN Company Profile

DAIKEN was established in September 1945 and in the more than half-century since that time, DAIKEN has grown into one of the world's leading manufactures of building materials.
Through the years, the primary business areas of the DAIKEN Group have expanded and diversified to include the manufacturing, sales and exporting of residential housing construction materials and industrial building materials, engineering, residential housing business, and business projects working toward the efficient utilization of wood and other material resources.
Through its ambitious research and development effort, DAIKEN is continuously working to develop the newest materials, concepts, and technologies.
Thanks to its steady product development and enhancement, DAIKEN is able to provide specialized technologies that merge both hardware and software aspects ranging from building materials and home equipment to housing structures in order to meet the needs of its customers.

Ecological products

Long before there was a strong global awareness of the need for environmental preservation, DAIKEN began to search for ways that the company, as a building materials manufacturer, could help to protect the global environment.
In 1952 DAIKEN began working on development of the "DAIKEN BOARD "wood fiber board that effectively utilizes wood waste.
Since that time, DAIKEN has been able to introduce various products and systems that are friendly to our planet and to human kind.
These include mineral fiber board called "EXCELTONE" for ceiling and wall paneling with "total thermal insulation" energy-saving construction method, and "DAILITE" which is made from mineral fiber and volcanic silicate, previously untapped sources of raw material.
DAIKEN is focusing on the idea of "reduce" in addition to "recycle and reuse" which is widely recognized as Ecological Products.
This is, working to develop products and systems from an environmental standpoint, fully minimizing waste generation in manufacturing processes and waste output when rebuilding residential housing.
As a result of these efforts, DAIKEN Corporation has earned ISO14001 certification.

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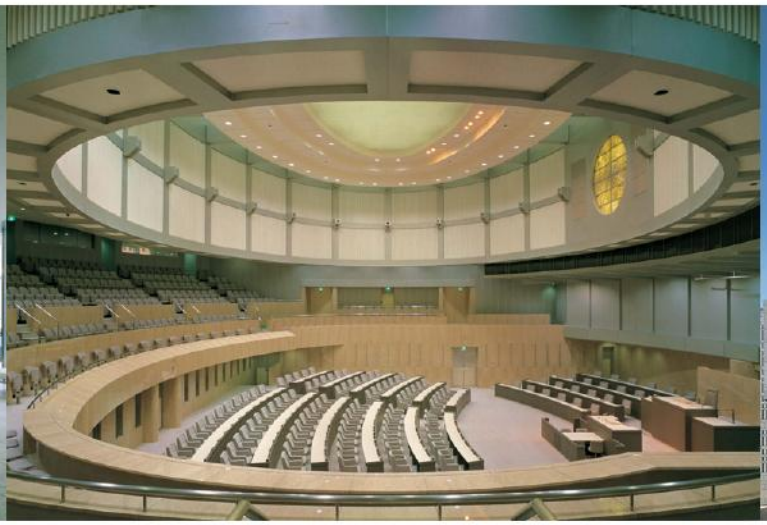
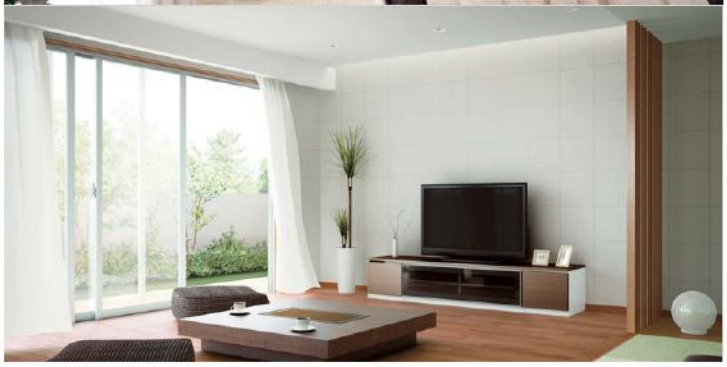
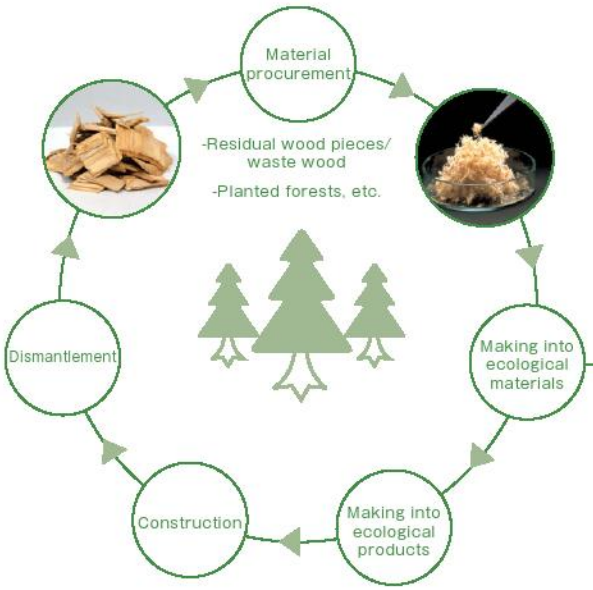




By creating material-recyclable products, DAIKEN widens the scope of what we can do to help the environment

Ever since its foundation, the DAIKEN Group has sought to find ways to help global environment conservation as a building material manufacturer. From the production launch of insulation boards using wood resources in 1958, we have produced and sold ecological products, effectively using residual wood pieces and waste wood from the demolition of buildings and lumbering process to date. DAIKEN has established a human- and eco-friendly resource recycling manufacturing system, including a sustainable tree-planting project in MALAYSIA.

<Manufacturing material-recyclable products>

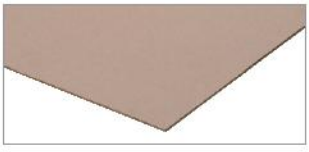


<DAIKEN Group's Ecological Products>

Woody fiber board: A board made from processing woody fiber

Insulation Boards
(less than 0.35g/cm³)

Applications: Base sheets, Tatami floor base, Protective sheets, etc.



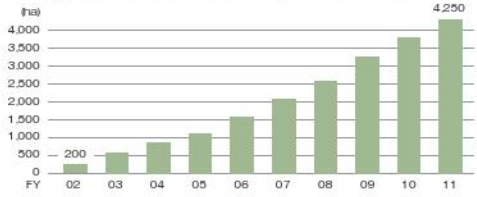
MDF (Medium Density Fiberboard)
(0.35 to 0.80g/cm³)

Applications: Interior doors, Flooring, Finishing materials, etc.

<Tree-planting Activities in MALAYSIA>

Aiming to prevent the depletion of South Sea wood, which is used as flooring, we participate in a sustainable forest management project advocated by the Sarawak state government in MALAYSIA. We started a tree-planting project in fiscal 2002 and the forested area has currently reached around 4,250 hectares. We address product development using the planted wood of this forest.

Changes in Forested Area (accumulated total)



By utilizing untapped resources; DAIKEN is constantly monitoring the future of the Earth

As well as wood resources, the DAIKEN Group also proactively addresses the effective utilization of untapped resources such as minerals. We developed 'rock wool inorganic board', which is produced from a byproduct of steel production and 'volcanic silicate and mineral fiber laminated board', which uses shirasu, a volcanic product obtained in southern Kyushu, as our unique ecological products. They offer heat insulation, acoustic absorption, humidity control and earthquake-proof properties, which makes them perfect for wide-ranging applications as building materials and for industrial use. We will continue to make products meeting both eco-friendly and living comfort requirements and exploiting untapped resources.

The mined area will be utilized for a field.

<Effective utilization of untapped resources>

<Untapped resources>

Slagwool

Slagwool is a fiber produced from slag, which is a byproduct of steel production.

Shirasu

Shirasu is a volcanic product distributed mainly in southern Kyushu and used in the foaming process.

Effectively utilizing a volcanic product obtained in the Shirasu-Daichi plateau in southern Kyushu as an untapped resource for building materials

	<Ecological materials>	<Ecological Products>
▶	Rock wool inorganic board Slagwool is processed into a plate-like object. ▶	<Ceiling Materials> Featuring a humidity control function, whereby in humid conditions, it absorbs humidity and in dry conditions, humidity is discharged <Ceiling and Wall Materials> Featuring humidity control and deodorizing ability, as well as a very appealing colorful design with gorgeous decoration.
▶	Volcanic silicate and mineral fiber laminated board An inorganic engineering panel It also helps reduce the use of plywood. ▶	<Exterior Wall Base Sheets> Featuring an excellent preservative, eliminating repelling, dimensionally stable and moisture permeable, meaning it can meet various needs. <Non-combustible Wall Materials> Featuring heat-, water- and oil-resistant properties, while remaining lightweight and with high workability. The shiny appearance of the mirror-like design is appealing.

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 ceilings from slag wool, a byproduct of iron manufacturing.

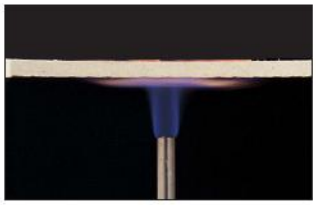
Slag is converted into mineral fibers, than the fibers are felted into DAIKEN Ceilings. Photo shows a piece of slag and mineral fibers.

There are many good reasons to choose DAIKEN Ceilings.

Advantages to Users

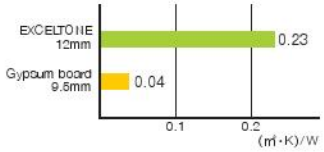
FIRE RESISTANCE

Outstanding fire resistance helps contain fires.



THERMAL INSULATION

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



SOUND ABSORPTION

Adequately absorb the sound and create comfortable reverberant sound.

JR Kyoto station,Kyoto,Japan

ECO Label

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.

(Registered Scope)
http://www.jtccm.or.jp/

ISO:International Organization for Standardization

[ISO 14001] related to Environmental Management Systems
[ISO 9001] related to Quality Management Systems

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.

Ceiling panels with outstanding humidity resistance.

EXCELTONE (MR series)
EXCELTONE (MR series) performance prove super quality.
It is guaranteed for 10 years against visible sagging up to 50℃ and 99% relative humidity.

EXCELTONE (MR series) HIGH NRC TYPE
Achieved superb high NRC value of 0.75 under ASTM C 423.

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	0.045 kcal/mh℃	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

Ceiling : Exposed Lay-in system
Marunouchi kitaguchi Building
Tokyo Japan

Ceiling : Semi-Concealed system
Dojima-Avanza Building
Osaka Japan

EXCELTONE Antibacterial and deodorant treatment

Anti-bacterium examination result

Bacteria	Specimen	Viable bacteria count / specimen (24 hours 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℃ and measure the bacteria count.
Tested by Japan Food Research Laboratories.

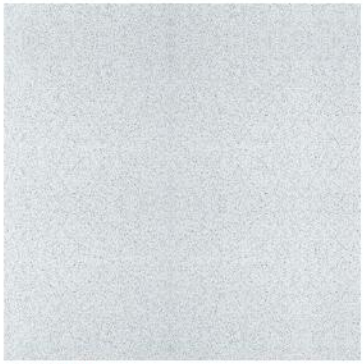
Available on any tiles

EXCELTONE (MR series)

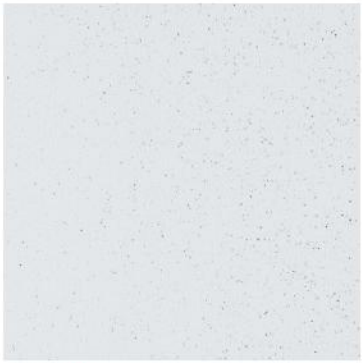
▲MD

▲MN

▲MC *1

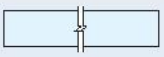
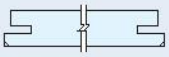
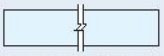
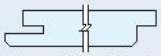
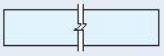
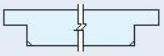
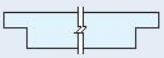
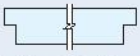


▲MA *1



▲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.

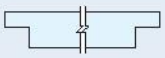
*1 MC, MA, MP and MV pattern has no square edge Semi-Concealed Tile.

▲MLC-10MN
MLC-10MA

▲MLC-20MN
MLC-20MA

▲MLC-40MN
MLC-40MA

▲MLC-41MN
MLC-41MA

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.

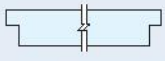
▲MLC-ZB

▲MLC-9MN
MLC-9MA

▲MLC-16MN
MLC-16MA

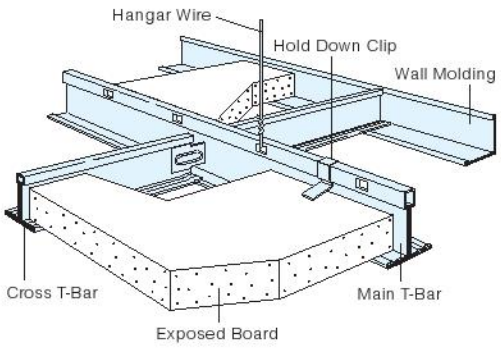
▲MLC-64MN
MLC-64MA

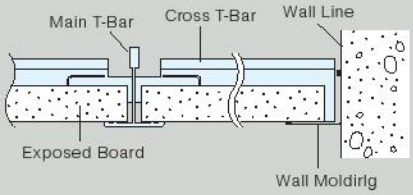
▲MLC-81MN
MLC-81MA

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.
	17mm ★2	24″x 24″(o.c.) 600 x 600mm (o.c.)	

★2 17mm is MLC-ZB only. All other MLC Tiles are 15mm.

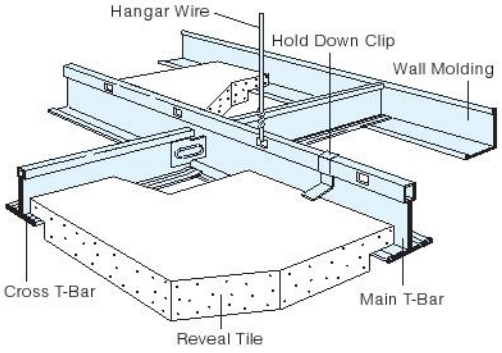
EXPOSED SYSTEM

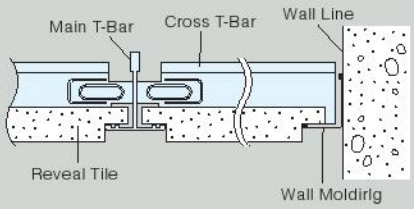




Section perpendicular to Main T-Bar

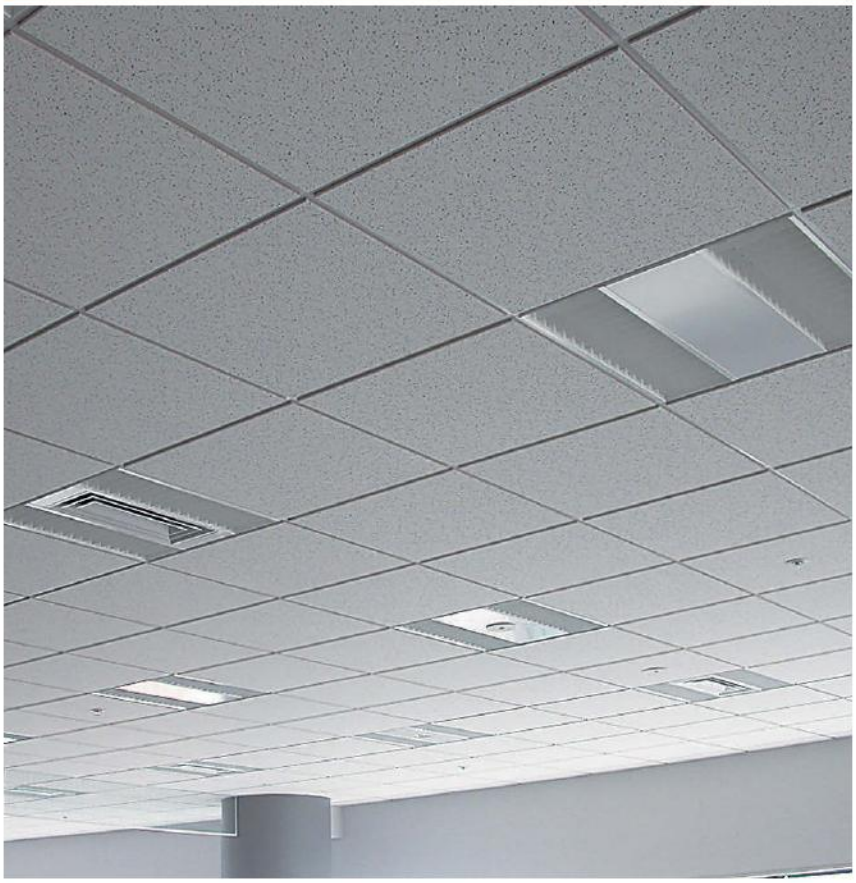
REVEALED SYSTEM

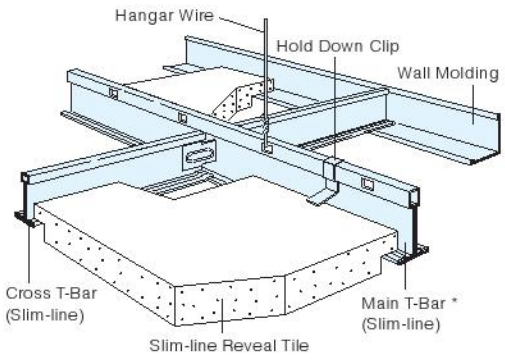




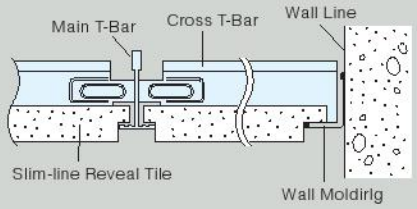
Section perpendicular to Main T-Bar

SLIM-LINE REVEAL SYSTEM



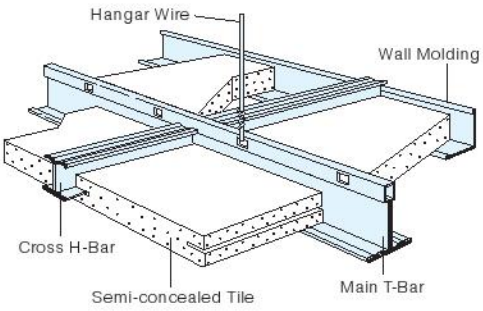


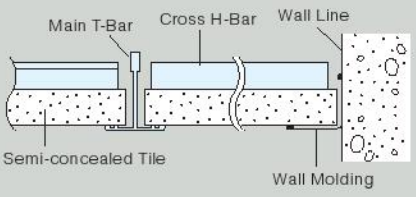
*Elite-Line T-Bar is also usable



Section perpendicular to Main T-Bar

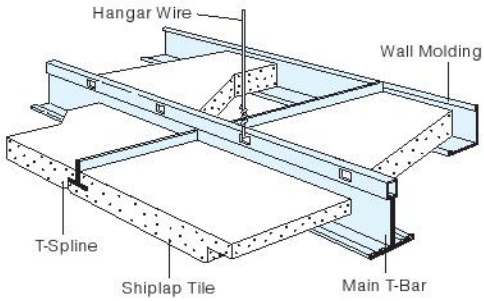
SEMI-CONCEALED T-BAR SYSTEM

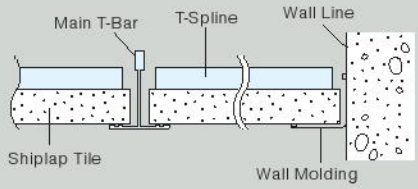




Section perpendicular to Main T-Bar

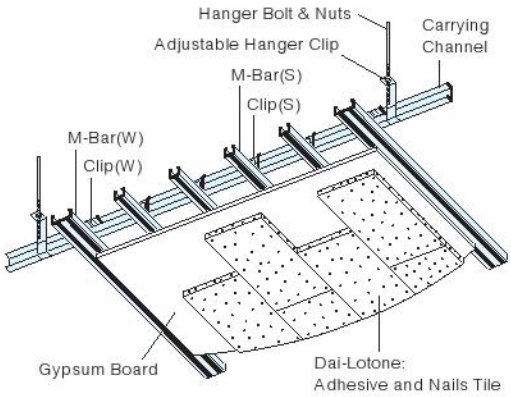
SHIPLAP T-BAR SYSTEM

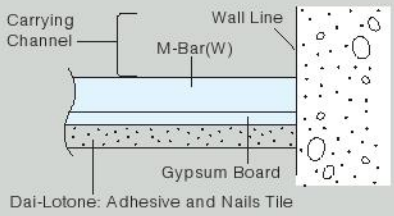




Section perpendicular to Main T-Bar

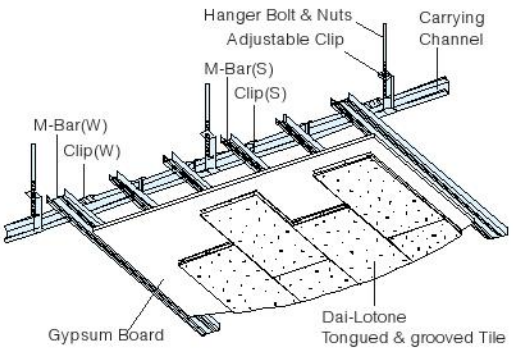
ADHESIVE AND NAILS SYSTEM or DOUBLE LAYER SYSTEM

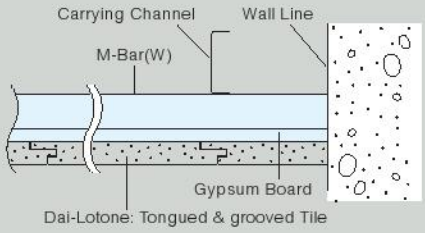




Section parallel to M-Bar

Tongued & Grooved Tile





Section perpendicular to Main M-Bar

NOTES FOR INSTALLATION

Trouble-free installation, satisfactory ceiling finish and the long life of DAIKEN mineral acoustical materials can be ensured by observing the following recommendations.

JOB SITE STORAGE

DAIKEN mineral acoustical materials should be stored in a dry and clean area protected from possible damage by rain, snow, and excessive moisture. If these acoustical materials are exposed to large variations of humidity or temperature, swelling and shrinkage can result. The acoustical materials should be also be protected against possible impacts and abrasions and kept at least one meter away from walls.

Stack the materials flat on a level floor with protective panels or sheets between the materials and the floor.

HANDLING

Acoustical materials should be handled with care to prevent impact or damage to edges, ends and surface.

Handle these materials with clean hands or gloved hands.

INSTALLATION CONDITIONS

A. Allow wet work, such as plaster and concrete work, to dry completely.

B. Water-proofing and flashing work should be completed. Windows and doors should be in place and glazed.

C. Conduits and duct work should be completed.

D. Care should be taken to place air-conditioning vents and other mechanical fixtures conveniently within the suspension system.

E. Installation should be done when relative humidity is not greater than 80%. (except EXCELTONE MR series). Avoid installing the materials if relative humidity exceeds 80%. Daily checks of humidity conditions during the installation period are suggested.

F. There should be adequate ventilation in the installation area if the building is new and humid conditions prevail. Before beginning installation, make certain that there is no condensation on the wall surfaces. Also, the heating system should be operating if the weather or installation area is particularly cold.

G. Damaged or soiled materials should be replaced.

INSTALLATION

Installation should be in accordance with our specifications and recommendations.

GENARAL MAINTENACE

CLEANING:

Dust and loose dirt can be easily removed with a brush or a vacuum cleaner. Take care to clean in one direction only. This will prevent dust from being rubbed into the surface. An alternative method of cleaning is with a moist cloth or a sponge dampened in soapy water. The sponge should be wrung dry. Use gentle strokes to wipe surfaces. After washing, the soapy film should be wiped off with a cloth or sponge slightly dampened in clean water.

REPAINTING:

DAIKEN mineral acoustical materials can be repainted by spraying, brushing, or roll coating without appreciable loss of acoustical efficiency. Dust and dirt should be thoroughly removed from the ceiling surface before repainting. Care should be taken to avoid applying paint thick enough to cover the perforations or fissures in the material. It is a good idea to test the paint on a small area or on a scrap of material, or surface stains bleed through the paint film., choose another paint. Regardless of the method of paint application employed, a good grade of paint from a reputable manufacture should be used. Acrylic, vinyl, latex, or alkyd paint for interior use may be applied.

SELECTING LIGHTING

When selecting any type of lighting, it is always advisable to consider the effect it will have on the appearance of an acoustical ceiling. The most functional of all types of lighting is the flush, recessed fixture commonly used with suspended acoustical ceilings. Where light from fixutre, cove lights or high windwos strikes the surfaces at a shallow angle, even slight unevenness of joints may result in unsatisfactory appearance. Under such conditions beveled edge materials should be used in preference to square edge materials, and should be installed with considerable care.

SPECIFICATION GUIDE

I SCOPE

A. The installation of all acoustical work covered in this section shall be a qualified acoustical contractor.

B. The acoustical contactor shall furnish all labor, materials and equipment necessary to complete the acoustical work in accordance with this section of the specifications and the applicable drawings.

C. Substitutions will not be permitted for materials and method covered in this section.

II GENERAL CONDITIONS

A. DAIKEN mineral acoustical materials shall not be used as support for or carry the loading of additional insulation, lighting, fixtures,etc.

B. The acoustical contractor shall be resposible for the examination and acceptance of all surfaces and conditions affecting the proper installation of this materials, and shall not proceed until all unsatisfactory conditions have been corrected by others.

C. All acoustical materials shall be installed by accepted installation practices.

III INSTALLATION

A. The acoustical contractor shall furnish and install DAIKEN mineral acoustical materials in strict accordance with DAIKEN' s recommendations in order to provide a satisfactory installation.

B. The acoustical contractor shall furnish and install the metal suspension system as manufactured by (specifyed manufacture) in strict accordance with the manufacture's recommendations in order to provide a satisfactory installation.

IV ACOUSTICAL MATERIALS

EXPOSED BOARD:

A. The acoustical material shall be mineral fiber Exposed Board as munufactured by DAIKEN Corporation, Japan.

B. The surface pattern shall be (specify pattern) with a dimension of (x x mm); all four edges shall be trimmed to be installed by an approved exposed grid suspension system.

C. The acoustical materials shall be manufactured by the wet felting process, with a factory applied Emulsion white paint finish having a light reflectance of 75% or more, or with a DAIKEN original color.

D. The acoustical material shall have sound absorption coefficients of ( ) and transmission losses of ( ).

CONCEALED TILE:

A. The acoustical material shall be mineral fiber Exposed Board as munufactured by DAIKEN Corporation, Japan.

B. The surface pattern shall be (specify pattern) with a dimension of (x x mm); all four edges shall be kerf and rabbet, beveled/squared, to be installed by an approved concealed suspension system.

C. The acoustical materials shall be manufactured by the wet felting process, with a factory applied Emulsion white paint finish having a light reflectance of 75% or more, or with a DAIKEN original color.

D. The acoustical material shall have sound absorption coefficients of ( ) and transmission losses of ( ).

SEMI-CONCEALED TILE:

A. The acoustical material shall be mineral fiber Semi-Concealed Tile as munufactured by DAIKEN Corporation, Japan.

B. The surface pattern shall be (specify pattern) with a dimension of (x x mm); two longer sides shall be kerf and rabbet, beveled/squared, and the two shorter sides trimmed to be installed by an approved Semi-Concealed system.

C. The acoustical materials shall be manufactured by the wet felting process, with a factory applied washable white paint finish having a light reflectance of 75% or more, or with a DAIKEN's original color.

D. The acoustical material shall have sound absorption coefficients of ( ) and transmission losses of ( ).

SHIPLAP TILE:

A. The acoustical material shall be mineral fiber Shiplap Tile as manufactured by DAIKEN Corporation, Japan.
B. The surface pattern shall be (specify pattern) with a dimensions of (x x mm); the two longer sides shall be shiplapped, beveled edges and the two shorter edges trimmed to be installed by an approved shiplap system.
C. The acoustical material shall be manufactured by the wet-felting process, with a factory applied washable white paint finish having a light reflectance of 75% or more, or with a DAIKEN original color.
D. The acoustical material shall have sound absorption coefficients of ( ) and transmission losses of ( ).

REVEALED TILE:

A. The acoustical material shall be mineral fiber Reveal Tile as manufactured by DAIKEN Corporation, Japan.
B. The surface pattern shall be (specify pattern) with a dimensions of (x x mm); all four edges shall be revealed (or the longer sides tongue and revealed for Tile A, grooved and revealed for Tile B, all short sides revealed for combination) to be installed by an approved recessed suspension system.
C. The acoustical material shall be manufactured by the wet-felting process, with a factory applied washable white paint finish having a light reflectance of 75% or more, or with a DAIKEN original color.
D. The acoustical material shall have sound absorption coefficients of ( ) and transmission losses of ( ).

SLIM-LINE TILE;

A. The acoustical material shall be mineral fiber Slim-Line Tile as manufactured by DAIKEN Corporation, Japan.
B. The surface pattern shall be (specify pattern) with a dimensions of (x x mm); all four edges shall be Slim-line revealed, squared to be installed by an approved recessed suspension system.
C. The acoustical material shall be manufactured by the wet-felting process, with a factory applied washable white paint finish having a light reflectance of 75% or more, or with a DAIKEN original color.
D. The acoustical material shall have sound absorption coefficients of ( ) and transmission losses of ( ).

ADHESIVE & NAILS TILE;

A. The acoustical material shall be mineral fiber Adhesive & Nails Tile as manufactured by DAIKEN Corporation, Japan.
B. The surface pattern shall be (specify pattern) with a dimensions of (x x mm); all four edges shall be squared, bevel/square edge, to be installed by an approved adhesive & nails system.
C. The acoustical material shall be manufactured by the wet-felting process, with a factory applied washable white paint finish having a light reflectance of 75% or more, or with a DAIKEN original color.
D. The acoustical material shall be in compliance with U.S. Federal Spec. SS-S-118B, Class 25, or shall have the approval (No.1021) as noncombustible material granted by the Japanese Minister of Construction.
E. The acoustical material shall have sound absorption coefficients of ( ) and transmission losses of ( ).

GUARANTEE OF EXCELTONE MR series

DAIKEN Corporation guarantees that "EXCELTONE MR series Mineral Fiber Ceiling Board in thickness of 5/8"& 3/4" shall have neither sagging nor warping over allowable limits and it is warranted to be free of defects directly attributed to the manufacturing faults for the period of 10 years from the date of installation of ceiling board as long as the material is installed and maintained under the conditions set forth below. Size and pattern should be inquired to DAIKEN Corporation, International Trade Division Tokyo.

1. The ceiling board shall be installed by approved ceiling contractor by us in compliance with DAIKEN's specifications and installation conditions.
2. Installation shall be done in areas free from excessive humidity, chemical fumes, freezing temperature and vibration.
3. Installation shall be done under the conditions of the temperature and relative humidity ranges 10 to 50˚C and 0 to 99% respectively. After the installation, the environmental conditions shall be controlled within the said limits.
4. The ceiling board shall not be affected with direct moisture such as leaks or condensation during and after installation.
5. The ceiling board shall not be used to support any other materials.
6. The ceiling board shall be mechanically suspended properly and shall not be cemented no glued to the surface of any other materials.
7. Prior to installation the ceiling board shall be stored in a dry and clean area, enclosed and protected from possible damages by rain, snow, and excessive moisture, and also protected from possible impacts and kept at least one meter off walls. Stack the ceiling boards flat on the floor level with protective panels or sheets between the ceiling boards and the floor.

In spite of the observance of the above conditions, should there be any sagging or warping, it must be informed in a written notice to DAIKEN Corporation, International Trade Division in Tokyo within 30 days after first observed such fact. After inspection and survey of the case and recognized, DAIKEN Corporation shall furnish new material for replacement in the same or similar specification and the equal quantity which is acknowledged by DAIKEN Corporation to be sagged or warped.

The furnishing of such ceiling board for the replacement shall constitute the total liability of DAIKEN Corporation, and DAIKEN Corporation shall not be responsible for any installation or replacement costs, or for incidental or consequential damages of any nature whatsoever.

DAIKEN CORPORATION

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