AICA

CERARL

NONCOMBUSTIBLE
DECORATIVE PANELS

CERARL

NONCOMBUSTIBLE DECORATIVE PANELS

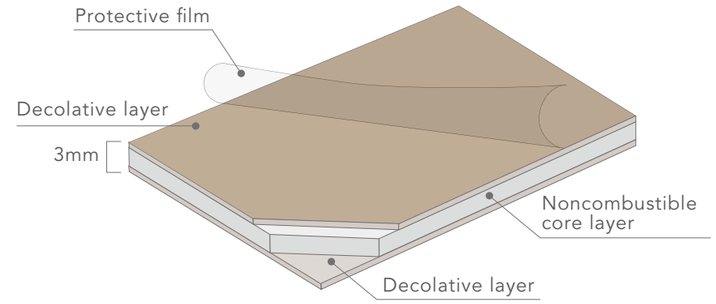
AS JAPAN'S NUMBER-ONE MAKER OF
HPL(HIGH PRESSURE LAMINATE) PRODUCTS,
AICA KOGYO MEETS ALL YOUR NEEDS.

CERARL noncombustible decorative panels are made with melamine resin-impregnated decorative layers and a specialized noncombustible core, formed by a high-temperature, high-pressure press.

Offering superb rigidity and strength, they're favored in public buildings as well as in the home.

WHAT IS CERARL

COMPOSITION OF CERARL



A WIDE VARIATION IN DESIGNS

Vast selection of designs

Solid colors, wood grain, stone, abstract patterns, and more!
A myriad of variations to choose from.

Heat and humidity-resistant

Won't discolor if splashed with hot water.
Not even cigarette stains stick!

Hygienic and sanitary

Maintains cleanliness by inhibiting growth of bacteria. Also suitable for bath and toilet areas.

Easy to maintain

Resistant to set-in stains, and easy to wipe clean.

Simple installation

Easy to cut smoothly and cleanly with woodworking carbide blades.

Durable and impact /scratch-resistant

Rigid and strong melamine resin protects these panels from cracking, shattering, splintering, and scratching.

1 FE-1788ZGN

PUBLIC FACILITIES

TAIWAN CHIMEI MUSEUM

DESIGN / U-JOINT Design Construction Co., Ltd, Diamond Chen
CONSTRUCTION / Long Tsai Corp

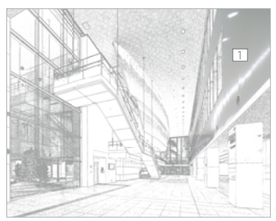
Traditional design of Western art museum

Taiwan's representative Western art museum, which was renovated, opened on New Year's Day 2015. The large museum stores Western paintings, sculptures, and art from the 15th to the 19th centuries. CERARL is used for the majority of the walls inside the building. The material used, the durability, and expressive power reflect the depth that contributes to the museum's potential as a permanent facility. The decorative designs are smooth, and the museum gained popularity as it brings out the high standard of Western art and the dignity of the museum.

KURE KIZUNA HALL

DESIGN / DAIKEN SEKKEI,INC. Hisashi Inoue, Shinya Tajima, Kyoshiro Enoki
CONSTRUCTION / PENTA-OCEAN CONSTRUCTION CO., LTD.
PHOTOGRAPH / Nacása & Partners Inc., Koji Fujii
Joint Photographs Haruki Hiyama

1 FKJ6000ZKN82



Large curved wall is a symbol of relaxation

The new government building in Kure City is the center of civic life. The civic mall leading to the park is a three-story colonnade where people can walk and relax. The large curved wall is symbolic of a sea breeze and the ship of Kure, a popular shipbuilding port. In order to emphasize the continuity of the curved wall, the end was finished without joints by using incombustible JOLYPATE, which offers different finish variations and high crack followability. The wall uses CERARL (a noncombustible decorative board) except for the curved surface.

1 FJ-2682ZNN74

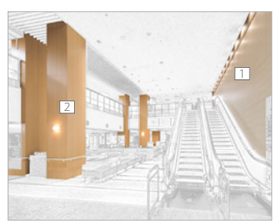
2 FJ-147ZN

HOSPITAL

Nara Medical University Hospital

CENTRAL SURGERY BUILDING

DESIGN / Naito Architects Co., Ltd.
PHOTOGRAPH / Fromage



Warmth of wood and soft lighting create a heartwarming atmosphere

As a core medical hospital for disasters in Nara Prefecture, our intention was to create a space that would ease the minds of patients and offer functional aspects that could withstand hard use. By combining the warmth of wood and soft lighting, we created a heart-warming, peaceful atmosphere. By adopting CERARL for the corridor and waiting room wall, the wall is hard to scratch and easy to clean, making it a comfortable space for both patients and hospital personnel.

SAITAMA PREFECTURAL CHILDREN'S MEDICAL CENTER

DESIGN / Kume Sekkei Co., Ltd.
(Makoto Nambu, Motonobu Ogura, Risa Sonoda, Maho Imai)
CONSTRUCTION / SHIMIZU CORPORATION

The unique design suitable for the children's hospital looks attractive in bright and colorful colors

The Saitama Prefectural Pediatric Medical Center relocated and improved together with the adjoining special support school. Highly functional beds in the NICU and PICU account for about 1/3 of the total number of beds and are fully equipped with advanced pediatric medical functions. Because Saitama Red Cross Hospital is on the same site, the two hospitals will be maintained as an integrated building, so that the appearance of the floor height of the lower floors will align with each other and thus give a sense of unity in the horizontal line. By matching the shape of the wards and the landscaping, the design also has a sense of unity. By adopting mace art panels, we maintained the uniform, stable beauty of the hospital. We also considered ways to relieve anxiety and fear accompanying hospital examinations and treatment by using color, form, window views, and artwork to stimulate the sensitivities of children. Colorful melamine decorative boards that are used help create the atmosphere suitable for children's hospital. Designed to see the landscaping from all windows in the hospital, we achieved a bright, homey environment for the children. Bright fancy colors used in the nursing stations help form a child-friendly space.

1 FTN2063ZD

Medical Corporation Seijin-kai

SEIJINKAI-SHIROI HOSPITAL

DESIGN / DAIKEN SEKKEI, INC.
(Design: Yuji Fukushima, Ryoji Yazawa, Structure: Kazuto Yoshihara, Atsushi Tadokoro, Electric Facilities: Osamu Ikeda, Machine Equipment: Takeshi Kanazawa, Kazuki Aiba)
CONSTRUCTION / Fujita Corporation

Interior space that offers both comfort and warmth

The new construction plan relocated the existing hospitals due to aging and insufficient space. Our goal was to improve the medical environment and the medical care environment for patients in response to local medical needs. The five-story hospital building consists of a seismic isolation structure, a hybrid structure of pillar RC structure, and beam S structure, and a two-story service building of S-structure, which is earthquake resistant. Consideration was given to BCP during a disaster by installing a seismic isolation structure and an oil tank that can generate emergency power for three days, a well water treatment facility, and an emergency drainage tank for dialysis. The facade has a curtain wall and a special RC exterior part in front of the background of the simple ward floor of the extruded cement board. The interior has a warm color tone to create a facility that gives comfort to patients, families, and hospital personnel. The CERARL waist wall system that is adopted has a sense of unity and durability by interlocking the handles on the wall finish. By creating an interior space that is comfortable and calming, it has become a widely accepted recuperative environment, and it gained popularity from hospital personnel and patients.


1

OPERATING ROOMS

International University of Health and Welfare,

MITA HOSPITAL

DESIGN / Yasui Architects & Engineers, Inc.,Tani Homare,Higashizono Hirofumi
CONSTRUCTION / TODA CORPORATION

Ageo Medical Group

MEDICAL TOPIA SOKA

DESIGN AND CONSTRUCTION / ISOTECH CORPORATION


2

OTHER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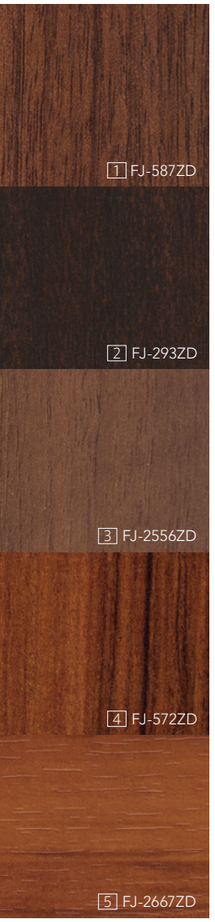
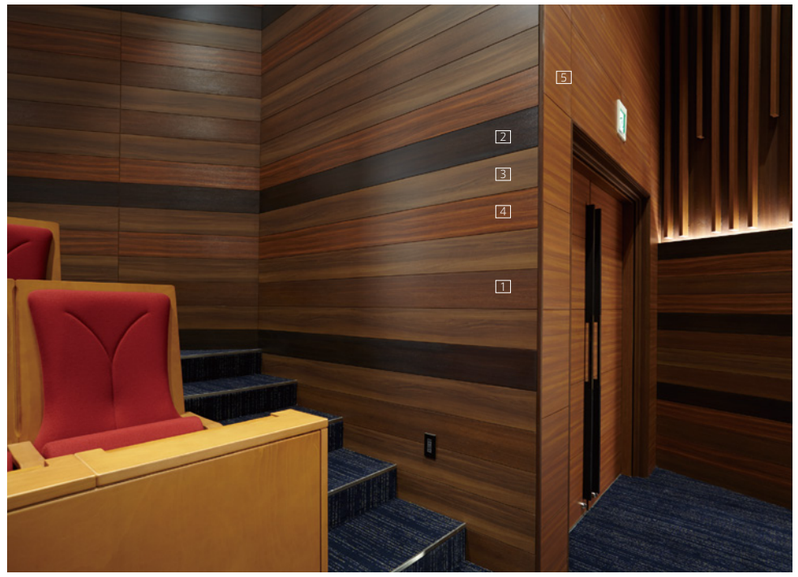
EDUCATIONAL FACILITIES

Chukyo University Nagoya Campus

BUILDING NO.1 (SEIMEI HALL)

DESIGN / Sumitomo Mitsui Construction Co., Ltd.





Elegance lies in the stacked wood grain pattern, academic hall of fame

The Nagoya campus development plan was carried out on the occasion of the 60th anniversary of Chukyo University. The Seimei Hall auditorium of Building No. 1 can house 500 people and was built with the intention of welcoming extracurricular lecturers and letting students have more connections to society.Wood grain CERARL gives a chic ambience to the stage wall and the auditorium chairs, using veneer plywood from prestigious natural wood. Woods in different shades of color are laminated to create striped patterns, eliminating any feelings of pressure from the wall. It is easy to process and has the characteristic melamine decorative boards with beautiful cross sections from the timber.

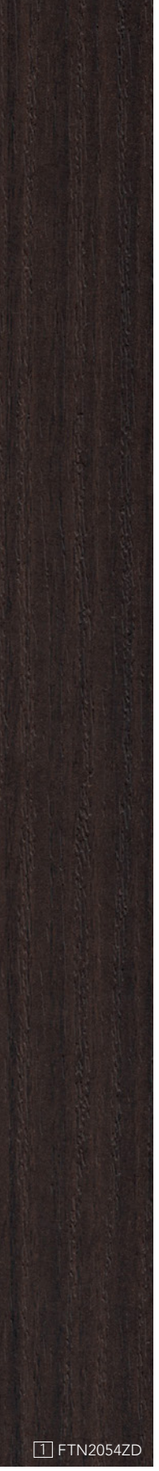
SHANGHAI TECH UNIVERSITY

CONSTRUCTION / Shanghai Construction Decoration Engineering Group Co.,Ltd.

Produces a solid feeling with woodgrain walls in different shades of colors

A new university was established in 2014 in Shanghai, which continues to develop as an international city. Aiming at a majestic space, we adopted wood grain CERARL and melamine decorative boards to highlight the wood shades and create an atmosphere with a profound impression. The sophisticated and beautiful space promotes student curiosity, and the high quality building materials made in Japan and the careful construction are highly appreciated.


1 FJ-2020ZJN67



1 FTN2054ZD

TRANSPORTATION FACILITIES

HANEDA AIRPORT JAL SAKURA LOUNGE

DESIGN DIRECTION/ A.N.D. Ryu Kosaka
DESIGN/ A.N.D.
DESIGN/SUPERVISION/ Azusa Sekkei Co., Ltd.

A lounge embodying Japanese aesthetic sense

The lounge for first class and business class passengers is new for the Haneda terminal building, which has been expanding its international flights. Designed to be the heart of hospitality, the lounge encompasses the aesthetic sense of the Japanese as a convenient gateway to Japan. CERARL is adopted for the wall surface and harmonizes with the texture rich, functional beauty. The luxurious feeling is not superficial, but rather a design that deeply touches the heart in a Japanese way.

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2 FTN2000ZN


1 FJ-695ZJN67
2 FTN458ZN
3 F-2680ZGD


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Sendai Subway Tozai Line

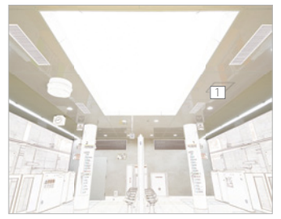
AOBA-DORI ICHIBANCHO STATION

DESIGN / GUN ARCHITECT DESIGN OFFICE

1 FAN1983ZMN

Bright space created by glare and reflection

Sendai Station of the Tozai Line opened in December 2015. From the image of Ichibancho crowded as the center, we emphasized the concept of a mirror that continues to reflect longing and aimed to create a bright space. The station adopted stone-tone CERARL for the ceiling and walls, so you can expect reflections on the finish material and visual effect due to the reflection of lighting. The material offers excellent incombustibility, durability, and moisture resistance. The space emphasized cleanliness and transparency and is gaining so much popularity that customers say, "It fits the image of the Ichibancho."



1 FKJ6000ZNN74

2 FKJ6305ZYD95

NAGOYA RAILROAD HIGASHI OKAZAKI STATION

DESIGN / Meitetsu Real Estate Dvelopment Co., Ltd.

At the core of a sunny modernist city

Okazaki City is the birthplace of Tokugawa Ieyasu. Many historical sites of the Tokugawa family remain. The station in the center has been reborn in keynote monotone, which is linked to the history and culture of the city. The relaxing space suppresses the reflection of light while increasing lighting efficiency from the heavy use of glass. CERARL is the foundation of the space. The high maintainability of antimicrobial specifications supports the durability and design of a station building crowded with visitors every day. The completion of modernism in the station building characterizes this simple and light city.

RESTROOMS & LAVATORIES

YOKOHAMA ARENA CUSTOMER TOILET (LARGE SCALE RENOVATION WORK)

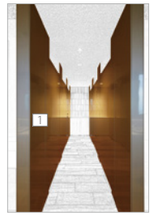
DESIGN EXECUTION / Takenaka Corporation

1 FKJ6000ZYN19

Cleanliness: Focuses on the contrast of drifting white and dark gray

The multipurpose hall has a maximum area of 8,000 m² in the arena and a maximum capacity of 17,000 people. Since its opening in 1989, it has been used for concerts and sports, but in order to update the facilities, we closed for six months and made extensive renovations. The restrooms use clean white as the base color for all Western-style toilets. The booth doors open in the opposite direction to normal. By using the contrast of white and dark gray inside the booths, we made it easy to recognize vacant booths. We use CERARL as the embossment that fluctuates with light. By combining the same color as the LUNALIGHT COLOR and melamine decorative board, the space has a clean and fresh impression. Also, for events where most visitors are female, it is possible to temporarily switch the sign of the male toilets for women.

1 FAS1840ZMN



Provide moisture and charm in front of Nagoya station

The concept of the office building is big trees on a green hill. Other than the interior and exterior, the building design pays attention to the landscaping, adding moisture and new charm to the scenery in front of the station. By unifying the pattern of the toilet booth and the wall, there is a sense of unity throughout. The aim of the design is a space wrapped in a tree's moisture amid big trees. By adopting a mirror finish, the room also expresses depth and luxury, as well as the height of the amenity.

DAINAGOYA BUILDING OFFICE TOILET

DESIGN / Mitsubishi Jisho Sekkei Inc.
CONSTRUCTION / Shimizu Corporation

Tamura Gakuen Educational Association

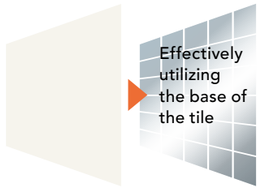
TAMA UNIVERSITY (TAMA CAMPUS)

DESIGN / Yoshimi Ito, Tohata Architects & Engineers, Inc.


1 FAN1806ZMN

CERARl ON tile construction method

Construction is possible without peeling off existing tiles. It is not necessary to establish a new base, so the construction term can be shortened.



Total coordination with natural color
Clean toilet space with sense of unity

Improve the image of the university by renovating the restrooms. Especially, the limited space of the toilet and the tile wall required improvement. But changing from Japanese to Western style, the area further narrows. So we used CERARL ON tile construction method and solved the problem. By arranging the whole space with AICA products, workability improved, and the design and function were upgraded. Designed for women's convenience, female students appreciate the new toilet space.

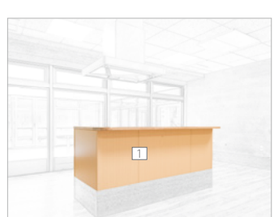
SAMANI SOBIRASO

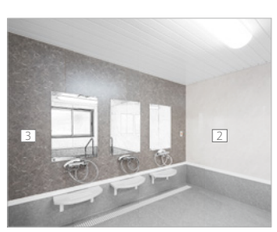
DESIGN / Docon Co., Ltd. (Fumihiko Saito)

1 FJ-2221ZN

2 FYA1780ZMN

3 FYA926ZGN





A dwelling house enjoying the soft sunshine and breeze, surrounded by nature

The newly built special nursing home for the elderly was relocated to Samani City in Hokkaido. The wall of the corridor is finished in JOLYPATE spring wave and autumn wind patterns as a space that evokes the four seasons of Japan. For the walls of the bathroom, we used a superior durable CERARL finish to ensure easy maintenance. The atmosphere of the building is open and calm.

LIVING ENVIRONMENTS

Lions Nerima Heiwadai

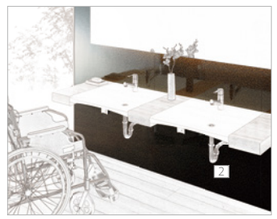
MASTER PLACE (CONDOMINIUM AND MODELROOM)

DEVELOPER / DAIKYO INCORPORATED

1 FAN1796ZMN

2 FAN892ZMD

COUNTER



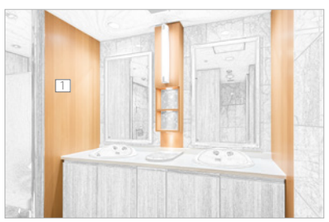
High class space fascinates with its interlocking handle

Tokyo New Century Residence = A model room for a residence based on the concept of a proposal for Japanese family life in a new era. The interior finish is stylish and expresses brightness and modernity with the contrasting wallpaper and wood grain fittings. The living room is finished in woodgrain pattern melamine decorative board. By changing the mirror surface, mat, and texture, the design gives the texture variations to produce a fine space with unified patterns.


1 FTN2012ZN

HOTEL NANPUSO (REFURBISHMENT)

DESIGN / Ikeda-Design Office Co., Ltd.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BATHROOM


2 F-1788ZGN

SHOWER ROOM


3 FYA1776ZGN

SERIES LINEUP

Noncombustible decorative panels

CERARL

This is a wall material with high solidity and design. The material demonstrates its usefullness for various applications including repairs.

Certificated by The Minister of Land,Infrastructure and Transport of Japanese Government | NM - 2183
SIZE | 3×6 (935㎜×1,855㎜) ± 2㎜　3×8 (935㎜×2,455㎜) ± 2㎜
THICKNESS | 3mm

CERARL deodorization type

Life smells on your mind are absorbed and decomposed. A deodorization function is added to CERARL.

Certificated by The Minister of Land,Infrastructure and Transport of Japanese Government | NM - 2183
SIZE | 3×8 (935㎜×2,455㎜) ± 2㎜
THICKNESS | 3mm

CERARL R edge

This is a panel for a wall surface with edges of Cerarl being rolled in. Storage is possible.

Certificated by The Minister of Land,Infrastructure and Transport of Japanese Government | NM - 2183
SIZE | 910㎜×2,410㎜ ± 2㎜
THICKNESS | 3mm

Main applications
Kitchen panel, sanitary wall, entrance wall, room wall, passage wall, toilet wall

Decorative panels for bath rooms

CERARL for bathrooms

This is a panel for bathrooms with easy maintenance. Suitable for renovations.

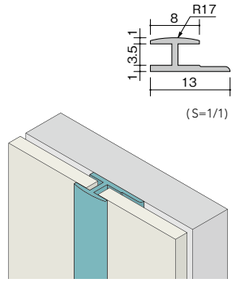
Certificated by The Minister of Land,Infrastructure and Transport of Japanese Government | NM - 2183
SIZE | 3×8 (935㎜×2,455㎜) ± 2㎜
THICKNESS | 3mm

Main applications
Bathroom wall

ACCESSORIE Aluminium joiner

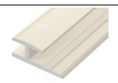
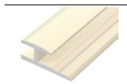
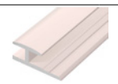
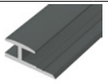
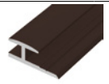
"I" Joint

Type-A



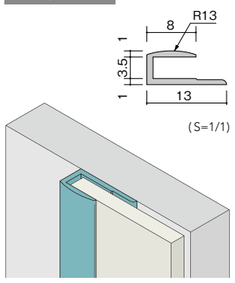
L:3,075mm

COLOR

	1 Silver 2pieces 20pieces	ZK-1021A ZK-1201A		3 Ivory 2pieces 20pieces	ZK-1023A ZK-1203A
	4 Beige 2pieces 20pieces	ZK-1024A ZK-1204A		5 Pale-Beige 2pieces 20pieces	ZK-1025A ZK-1205A
	7 Ice white 2pieces 20pieces	ZK-1027A ZK-1207A		8 Snow white 2pieces 20pieces	ZK-1028A ZK-1208A
	OLO Light orange 2pieces 20pieces	ZKA 102OLO ZKA 120OLO		LRO Light rose 2pieces 20pieces	ZKA 102LRO ZKA 120LRO
	DGR Dark gray 2pieces 20pieces	ZKA 102DGR ZKA 120DGR		DBR Dark brown 2pieces 20pieces	ZKA 102DBR ZKA 120DBR

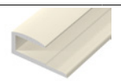
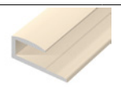
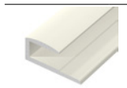
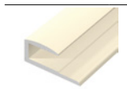
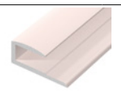
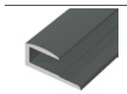
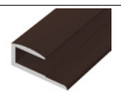
Terminal Joint

Type-B



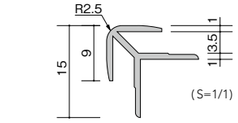
L:3,075mm

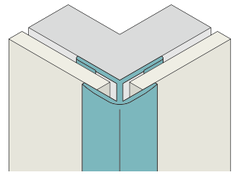
COLOR

	1 Silver 2pieces 20pieces	ZK-1021B ZK-1201B		3 Ivory 2pieces 20pieces	ZK-1023B ZK-1203B
	4 Beige 2pieces 20pieces	ZK-1024B ZK-1204B		5 Pale-Beige 2pieces 20pieces	ZK-1025B ZK-1205B
	7 Ice white 2pieces 20pieces	ZK-1027B ZK-1207B		8 Snow white 2pieces 20pieces	ZK-1028B ZK-1208B
	OLO Light orange 2pieces 20pieces	ZKB 102OLO ZKB 120OLO		LRO Light rose 2pieces 20pieces	ZKB 102LRO ZKB 120LRO
	DGR Dark gray 2pieces 20pieces	ZKB 102DGR ZKB 120DGR		DBR Dark brown 2pieces 20pieces	ZKB 102DBR ZKB 120DBR

Corner Joint

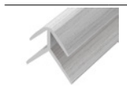
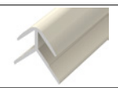
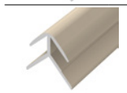
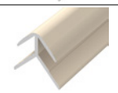
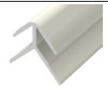
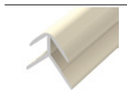
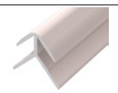
Type-C



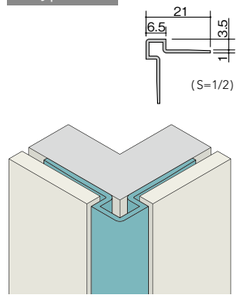


L::3,075mm

COLOR

	1 Silver 2pieces 20pieces	ZK-1021C ZK-1201C		3 Ivory 2pieces 20pieces	ZK-1023C ZK-1203C
	4 Beige 2pieces 20pieces	ZK-1024C ZK-1204C		5 Pale-Beige 2pieces 20pieces	ZK-1025C ZK-1205C
	7 Ice white 2pieces 20pieces	ZK-1027C ZK-1207C		8 Snow white 2pieces 20pieces	ZK-1028C ZK-1208C
	OLO Light orange 2pieces 20pieces	ZKC 102OLO ZKC 120OLO		LRO Light rose 2pieces 20pieces	ZKC 102LRO ZKC 120LRO
	DGR Dark gray 2pieces 20pieces	ZKC 102DGR ZKC 120DGR		DBR Dark brown 2pieces 20pieces	ZKC 102DBR ZKC 120DBR

Type-Q

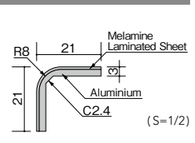


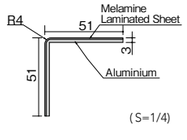
L:3,075mm

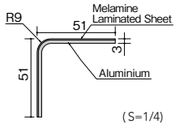
COLOR

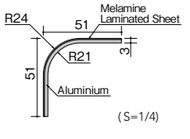
	1 Silver 2pieces 20pieces	ZK-1021Q ZK-1201Q

HPL External corner









ZKH
ZKN

ZKJ

ZKF

ZKG

ZKL

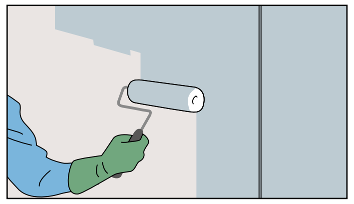
L:2,430mm

Construction Manual for CERARL

1 → 2 → 3 → 4 → 5 → 6 → 7 → 8

Foundation work | Layout | Cutting and processing | Sticking special temporary tacking tape | Applying special adhesive agent | Pasting and crimping | Sealing | Peeling curing film

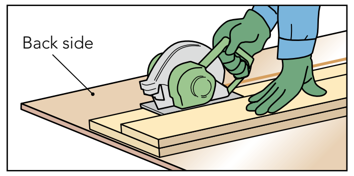
1 Foundation work

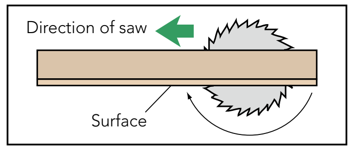


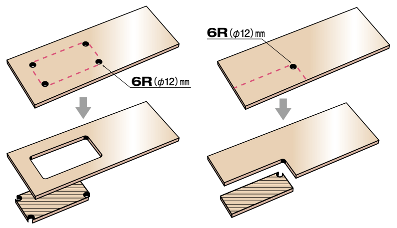
2 Layout

Position CERARL so that it does not overlap the foundation material joints.

3 Cutting and processing







Drilling for socket

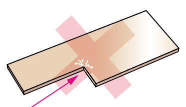
① Drill a hole in all four corners.
② Cut with small multi-tool or jigsaw.
③ Sand the cut surface smooth.

Notching

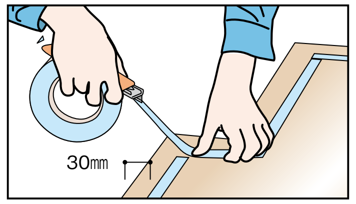
① Drill a hole in the corner.
② Cut with small multi-tool or jigsaw.
③ Sand the cut surface smooth.

Caution

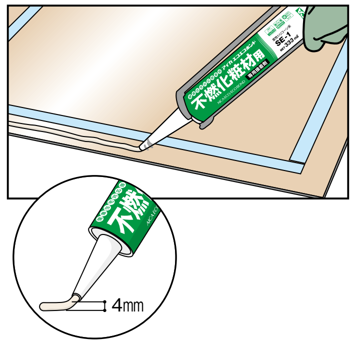
When cutting at a sharp angle as shown at right, cracks may occur.



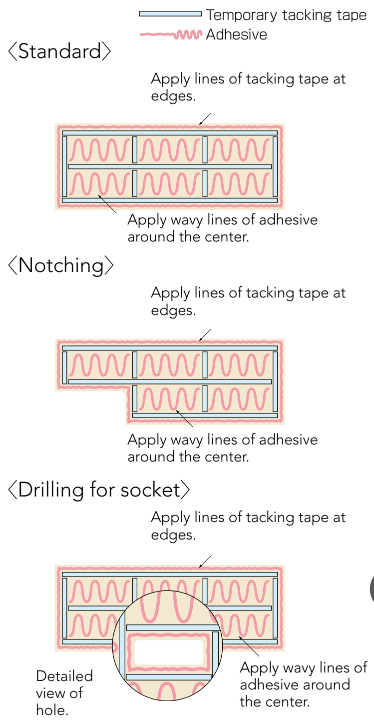
4 Sticking special temporary tacking tape



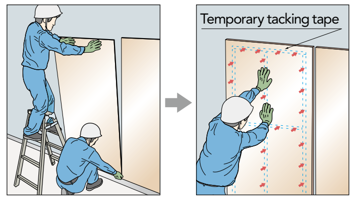
5 Applying special adhesive agent



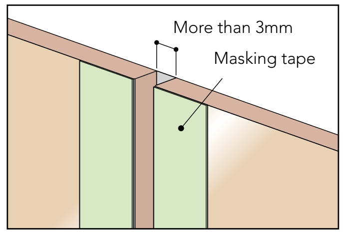
【Standard Application Pattern】



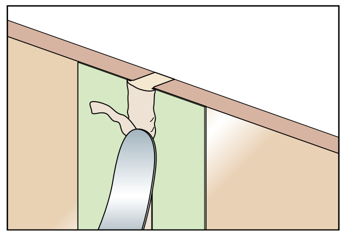
6 Pasting and crimping



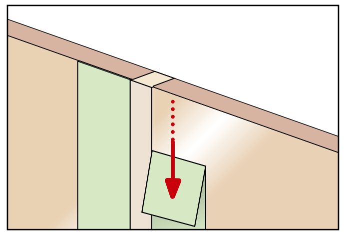
7 Sealing



Cover edges with masking tape and apply a bead of silicone the full length.



Smooth silicone and remove excess using a spatula.



Remove masking tape gently toward the inside.

8 Peeling curing film

Completion

CERTIFICATE OF COMFORMITY

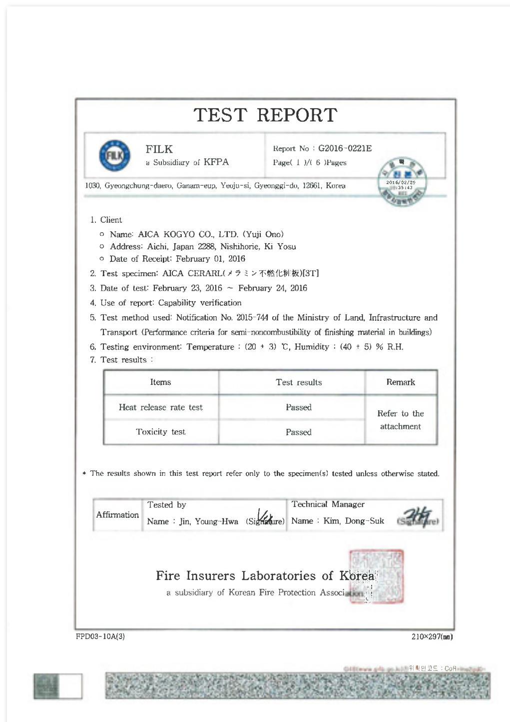
CERARL is a product with its nonflammability widely recognized internationally.

China

Taiwan

Singapore

Korea



*All certificates are valid as of Oct., 2017.

Table of physical properties of AICA CERARL

Product name / Test items		FKM6000ZMN (Plain color)	FJ-2011ZJN67 (Patterned)	Test method	
Certified by the Minister of Land, Infrastructure, Transport and Tourism		NM-2183		Building Standard Law Article 2 Paragraph 9 Non-combustible material	
Thickness (mm)		3.0	3.0	JIS K 6902	Mean value of measurements of four points on the circumference obtained by a micrometer with 1/100 mm resolution.
Appearance		Free of any defect	Free of any defect	JIS K 6902	Visually assess irregular color and irregular luster.
Bulk specific gravity		1.77	1.68	In-house test	Measure mass in water and mass at the time of water absorption and compute based on a specified calculation formula.
Heat resistance		Class 5	Class 5	JIS K 6902	Place a flat-bottomed pan containing 180ºC vegetable oil on the test specimen and let it stand for 20 minutes.
Hot water resistance		Class 5	Class 5	JIS K 6902	Spill a small amount of boiling water on the test specimen, place a flat-bottomed pan containing boiling water on the test piece and let it stand for 20 minutes.
Wear resistance	Wear value (rotations)	643	260	JIS K 6902	Examine wear conditions of color and pattern every 25 rotations by a Taber abraser with the load of each abrasive wheel adjusted to 5.20±0.2N. Endpoint: When the color of facial-powder paper first disappears for the plain color. When 50% of printed patters disappear for patterned material.
Dimensional stability (high temperature)	Longitudinal direction (%)	0.22	0.22	JIS K 6902	Find the rate of change at the time of contraction when dried at 70ºC for 24 hours and at the time of expansion when letting it stand at 40ºC 90% RH for 96 hours.
	Lateral direction (%)	0.24	0.23		
Impact resistance (large ball)	Falling ball height (cm)	70	70	In-house test	Fix a 230±5 mm test specimen to a support stand, allow a 325±5 g steel ball to fall, and check the surface for any sign of cracking.
	Cracking on the surface	None	None		
Contamination resistance		(Minor change) 14, 15	(Minor change) 14, 15	In-house test	Add the contaminated material stipulated under this table dropwise to the test specimen surface or allow it to adhere to the specimen surface, cover with a watch glass, and let it stand for 16 to 24 hours. Then wash with water/alcohol and check the surface for any sign of change.
Light resistance	⊿E (48 hrs)	1.5	0.3	JIS K 6902	Expose the test specimen by UV carbon fade meter and express changes in color tone by Lab.
	Appearance after test	Class 3	Class 5		
Elastic modulus (longitudinal/lateral) (GPa)		15.0/12.7	14.3/13.7	JIS K 7171	Compute from the tilted portion of the breaking/deflection curve by the specified calculation formula.
Bending strength (longitudinal/lateral) (MPa)		77.0/56.8	92.5/66.7	JIS K 7171	Apply load to test specimen at a loading rate of 1 mm/min with the 3-point bending method by the material test machine and compute from the breaking load.
Pencil hardness		8H	8H	In-house test	Under a 1000-g load, conduct a scratch hardness test using a pencil of each hardness. Visually confirm the appearance after the test.

* The data in the table are not guaranteed values but reference values.

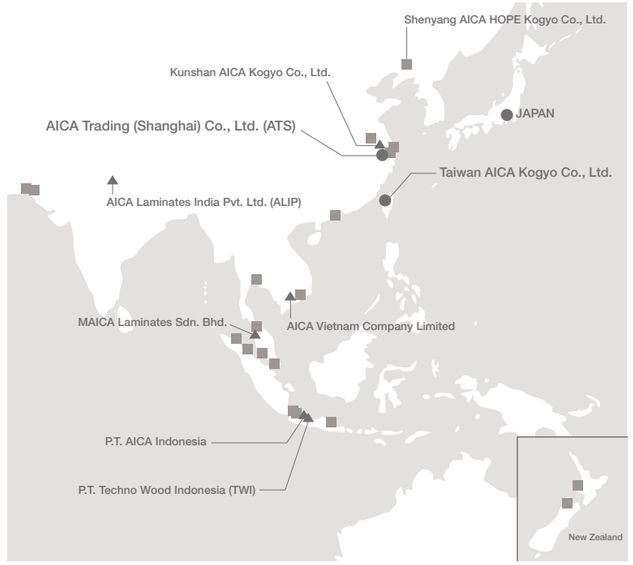
(Contamination resistance Contaminated material)
1. Tea, 2. Coffee, 3. Milk, 4. 1% alcoholic iodine solution, 5. Vinegar, 6. 10% aqueous solution of citric acid, 7. Gasoline, 8. Acetone (for industrial use), 9. Olive oil, 10. 10% ammonia water, 11. Crayon (red, black, and blue), 12. Shoe cream (black), 13. Dyestuff (food dye red), 14. office ink, 15. 2% aqueous Mercurochrome solution, 16. 5% aqueous carbolic acid solution, 17. Aqueous acid sodium sulfite solution, 18. Soy sauce

(Description on the class)
Heat resistance and hot water resistance
Class 5: No change; Class 4: Slight change in luster and/or color change as viewed at a specific angle.; Class 3: Moderate change in luster and/or color change; Class 2: Apparent change in luster and/or color change; Class 1: Damage and/or blister generated on the surface.

Light resistance
Class 5: No change in color or surface finish; Class 4: Slight change in color or surface finish at a specific angle and in a specific direction; Class 3: Moderate change in color or surface finish at all angles and in all directions; Class 2: Apparently identified at all angles and in all directions; Class 1: Blister and/or cracking on the surface.

*This table of physical properties of AICA CERARL is English tranlated version of the Japanese language original.

AICA GROUP



AICA Asia Collection and DIA collection manufactured by P.T. AICA Indonesia under high surveillance of:
1. ISO 9001:2008
   Quality Management System
2. ISO 14001:2004
   Environmental Management System
3. Green Label Singapore
4. Greenguard

● Main business base
▲ Main production base
■ AICA Asia Pacific Holding Pte. Ltd. Production base

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