ECOCARAT

Functional Interior Ceramics that helps to maintain good health.
Harmful Substance Absorption

Humidity Control

Reduce Odors

Harmful Substance Absorption

Design

"ECOCARAT" is the functional Interior Ceramics made in JAPAN.

※For details, please refer to p.40-p.45

"Allophane", this is a secret of ECOCARAT.

What is the different factor between conventional tiles and ECOCARAT?

ECOCARAT consists of a special mineral "Allophane". It's natural clayey mineral contained in the volcanic ashes which has innumerable micro-pores. Also, allophane has an ionic exchange phenomenon. Therefore, ECOCARAT has power to reduce VOC and absorb the extra moisture.

※VOC = Volatile Organic Compounds

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ECOCARAT will allow your guests the best hospitality because it creates a health-conscious room.
Illumination makes ECOCARAT more attractive and makes screen images more beautiful.
ECOCARAT coordinates with normal tiles that can build up a luxury living theater.

Different texture of ECOCARAT and ambient light makes various aspects and is different from paint.

No color failure from UV ray, so ECOCARAT’s beauty will always be there.
Wide open living room and art wall, ECOCARAT fill that room with fresh air.

Various textures of ECOCARAT create massive ambience around the staircase.

The space friends and family get together. ECOCARAT greets your friends with clean and healthy air.
Beautiful shades made by ECOCARAT change the image of the bedroom between day and night.

ECOCARAT reduces unpleasant odors and makes a comfortable living room.
Dark toned ECOCARAT offers relaxing space, comfort humidity controlled clean air, and relieves the day’s fatigue.

Pleasant sleep and good morning as ECOCARAT controls the humidity and reduces unpleasant odors.
Using ECOCARAT at entrance design wall greets visitors. Shade attaches more accent on the wall.

ECOCARAT controls stable humidity, even if entrance is effected by outside weather.
Clinic
Takeuchi Clinic

ECOCARAT reduces particular odors in hospital.

Waiting room is a space that is used by everyone, so it needs to be the space where anyone can relax. ECOCARAT with its gentle, earthy texture reduces unpleasant medicinal odors. Even in the waiting room, where patients and family members are so apt to feel stress, ECOCARAT offers a warm feeling of peace.

Clinic
Tamura Dermatology Clinic

To decorate the entrance and impress on comfortable and clean.

Hospital
Shizuoka Sena Hospital

Toilet room should be a pleasant place because we want people to use it comfortably.

Voice of the customer

We have patients whose symptoms of allergies or skin problems worsen with minor smells or chemical substances in the air. We are very satisfied with the results of ECOCARAT and it has proven effective in reducing these problems. Our patients are also happy with the effectiveness of ECOCARAT in reducing toxins in the air. We have an air purification system set up in the waiting room, however we have not needed to use it as ECOCARAT is successfully performing humidity control as well.

Voice of the customer

Considering such places as hospitals, we decided to use ECOCARAT for its deodorization capability and soft appearance. While the relaxed atmosphere calms and soothes our patients, its strong deodorizing effects have allowed us to create a warm and welcoming space, you would not think you were in a hospital.

Voice of the customer

ECOCARAT, which produces a sense of calm and natural relief, has created a bright interior space in harmony with the light and gives the comfort to parents and children to visit. Additionally, its many functions, including its excellent deodorization and humidity control properties as well as its advanced design, help to put many people at ease, which has earned a very favorable reputation as a place to feel relaxed. A space where one can be oneself, and a place to be healed.

CAUTION
Avoid use in places where there is a risk of making it dirty near during cleaning (commercial kitchen, window bain of public laundry, etc.)
Kindergarten

Sana Gouchi Kindergarten

Putting the health of the children first.

Voice of the customer

We have created a recognized and appreciated use of ECOCARAT’s humidity control and harmful substance absorption capabilities to ensure that small children, who are especially vulnerable to air pollution, always remain healthy. Thanks to ECOCARAT’s impressive maintenance properties, we were even able to place it in high, hard-to-reach places, because it does not need to be replaced; as such, it is perfect for nursery schools. Warmth of the earth gives children energy.

Beauty Parlor

Hioki Beauty Parlor

ECOCARAT produces a bright and cheerful space. It also removes the odors of beauty products.

Voice of the customer

ECOCARAT reduces the odors of perm treatments and so forth, helping to create a truly bright, lively atmosphere in the beauty parlor. Also, it has a lovely harmony with illumination, which has made our shop very fashionable. Everyone is surprised that the posters hanging on the wall don’t get wrinkled from the humidity.

Museum

Sumio Goto Art Museum

ECOCARAT is used to preserve an art object.

Added to avoiding light, controlling air condition is very important to preserve paintings in museums. ECOCARAT can control humidity to prevent mold and propagation of bacteria and preserves paintings well.

Café & Restaurant

Café & Restaurant Leaf

The natural feel of the material welcomes and embraces visitors.

Thanks to ECOCARAT, the warm, natural texture of the earth has been reproduced in the shop. Healing to the eyes—and hearts—of customers, ECOCARAT, through its unique texture, has helped to differentiate the shop from others.

Spa

Manai Day Spa

Beautiful, refreshing air creates health and beauty.

ECOCARAT prevents the skin’s mortal enemy — dryness, and purifies unclean air, enabling the creation of an air environment that is kind to the skin and throat. It is good to use in places such as beauty salons where people pursue health and beauty.

Voice of the customer

ECOCARAT is used to preserve an art object.

Putting the health of the children first.

ECOCARAT produces a bright and cheerful space. It also removes the odors of beauty products.

Avoid use in places where there is a risk of staining by dirty water during cleaning (commercial kitchen, window back of public lavatory, etc.).
ECOCARAT is designed specifically to make exquisite interior walls. Made of natural raw materials, ECOCARAT has natural warmth and delicate, quiet shades of color. ECOCARAT, whose distinctive properties are not found anywhere else, helps to create an attractive new space one rank higher.
PRECIOUS MOSAIC PETRASQUARE

The concave-convex natural stone design produces a beautiful pattern of light and shade.

303×303mm

<table>
<thead>
<tr>
<th>Color</th>
<th>Code</th>
<th>Width</th>
<th>Length</th>
</tr>
</thead>
<tbody>
<tr>
<td>Light Gray</td>
<td>ECO-60NET/PTS1</td>
<td>11.8×11.8×11.8</td>
<td>11.8×11.8×11.8</td>
</tr>
<tr>
<td>Light Beige</td>
<td>ECO-60NET/PTS2</td>
<td>11.8×11.8×11.8</td>
<td>11.8×11.8×11.8</td>
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</tbody>
</table>

PRECIOUS MOSAIC VELE

The rounded convex design produces a beautiful pattern of light and shade.

303×303mm

<table>
<thead>
<tr>
<th>Color</th>
<th>Code</th>
<th>Width</th>
<th>Length</th>
</tr>
</thead>
<tbody>
<tr>
<td>Light Grey</td>
<td>ECO-60NET/PTS1</td>
<td>11.8×11.8×11.8</td>
<td>11.8×11.8×11.8</td>
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<tr>
<td>Light Beige</td>
<td>ECO-60NET/PTS2</td>
<td>11.8×11.8×11.8</td>
<td>11.8×11.8×11.8</td>
</tr>
</tbody>
</table>

Color coordination with other series

<table>
<thead>
<tr>
<th>Series</th>
<th>Code</th>
<th>Color</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECO-60NET/PTS1</td>
<td>Light Grey</td>
<td>ECO-60NET/PTS2</td>
</tr>
<tr>
<td>ECO-60NET/PTS2</td>
<td>Light Beige</td>
<td>ECO-60NET/PTS1</td>
</tr>
</tbody>
</table>

Example of wall corner mounting

Example of wall internal angle
**DOME BORDER**

A simple and modern space can be produced by the combination of a dome-shaped border and flat edges.

**PRECIOUS MOSAIC CASSÉ**

The textured design, resembling crushed stone, creates a beautiful pattern of light and shade. Recommended to highlight stores and homes.

---

**Example of internal angle mounting**
THE SIMPLER MOSAIC ROSECHE

The roughly-hewn stone mosaic design creates a beautiful pattern of light and shade. Recommended to highlight living rooms.

The simple textured design produces a beautiful pattern of light and shade. Combine it with ECOCARAT SIMPLE to create a beautiful highlight wall.

SIMPLE

Plain surface and ribbed surface refined designs will highlight any stylish and modern space.

VOC adsorption/moisture control/deodorization

To install THE SIMPLER MOSAIC ROSECHE, apply adhesive to the prepared wall surface then apply the adhesive surface horizontally. The thickness of individual ECOCARAT parts should be below 4mm. Do not apply pressure to each individual piece to ensure they all adhere uniformly to the adhesive.
ROCK

The roughly-hewn stone motif creates a luxurious image. Recommended for highlight walls in entrance halls and living rooms.

**ECO-SET/ST2/RR1**

For highlight walls in entrance halls and living rooms. The roughly-hewn stone motif creates a luxurious image. Recommended as a highlight wall in the entrance hall and living room.

**ECO-SET/ST1**

This series creates the image of luxurious stone masonry. Recommended as a highlight wall in the entrance hall and living room.

---

**STONE**

*Color coordination with other series*

*Codes in parentheses following the product color code show the color code and name of the CARAT CAUSA that should be used.

**Example Layout**

As seen in the illustration below, by rotating and combining the basic patterns a more natural stone arrangement is possible.

*In the case of wall corner mounting, please arrange pieces so that left-hand ends of patterns A-C come to the wall corner and replace ECOCARAT pieces in contact with the corner using 303x151mm (side glazed type), 303x303mm (side glazed type), and 151x151mm (side glazed type) pieces.

---

**Different shape set**

(Not contents)

- One 303x151mm unit set is packaged in each case.

**Regarding differing shape set**

- As shown in the illustration, the layout is achieved by repeating the basic set pattern.

**Color coordination with other series**

<table>
<thead>
<tr>
<th>Color coordination with</th>
<th>White Beige</th>
<th>Yellowish Brown</th>
<th>Reddish Brown</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECO-SET/ST1 - ST2</td>
<td>303x151mm</td>
<td>303x303mm</td>
<td>151x151mm</td>
</tr>
<tr>
<td>side glazed type</td>
<td>12.4 pieces</td>
<td>7.6 pieces</td>
<td>2.4 pieces</td>
</tr>
<tr>
<td>side glazed type</td>
<td>7.6 pieces</td>
<td>4.5 pieces</td>
<td>1.5 pieces</td>
</tr>
<tr>
<td>side glazed type</td>
<td>4.5 pieces</td>
<td>2.8 pieces</td>
<td>1.0 pieces</td>
</tr>
<tr>
<td>side glazed type</td>
<td>2.8 pieces</td>
<td>1.8 pieces</td>
<td>0.8 pieces</td>
</tr>
<tr>
<td>side glazed type</td>
<td>1.8 pieces</td>
<td>1.3 pieces</td>
<td>0.5 pieces</td>
</tr>
<tr>
<td>side glazed type</td>
<td>1.3 pieces</td>
<td>1.2 pieces</td>
<td>0.4 pieces</td>
</tr>
</tbody>
</table>

---

**Diffusion with VOC adsorption/moisture control/deodorization**

- Side glazed type

---

**Diffusion with VOC adsorption/moisture control/deodorization**

- Side glazed type
QUARTZ STONE
Quartz stone has been specifically textured to resemble the feelings of quartzite. Recommended for wall use to give a luxurious touch.

BRICK
The traditional style of the textured brick design will beautifully highlight any interior space. Recommended for highlighting in homes.

ECO-250/B1 Cream Beige (B1) *
ECO-250/B3 (Cotto Orange) (B3) *
ECO-250/B4 Brick Red (B4) *

ECO-303/QS1 Light Brown/NA1 *
ECO-303/QS2 Beige/NA2 *
ECO-303/QS3 Light Brown/NA4 *

ECO-345/QS1 White/R01 *
ECO-345/QS2 Beige/R02 *
ECO-345/QS3 Light Brown/R04 *

303×303mm side glazed type
ECO-303/QS1～QS3 5 pcs./ctn. 10 ctn./case

303×455mm side glazed type
ECO-303/QS1～QS3 5 pcs./ctn. 10 ctn./case

ECO-345/QS1～QS3 5 pcs./ctn. 10 ctn./case

320×50mm angle
ECO-250/B1～B5 100 pcs./ctn. 50 ctn./case
ECO-2501/B1～B5 50 pcs./ctn. 50 ctn./case

303 x 303 砖 (側面刷) ECO-303/QS1～QS3 5 個/case 10 cases/case

303 x 455 砖 (側面刷) ECO-303/QS1～QS3 5 個/case 10 cases/case

320 x 50 砖 (側面刷) ECO-303/QS1～QS3 5 個/case 10 cases/case

302 x 50 砖 (角度) ECO-250/B1～B5 500 個/case 50 cases/case

Color coordination with other series:

B1 B2 B3 B4 B5
QUARTZ STONE
WHITE WHITE WHITE WHITE WHITE
BEIGE BEIGE BEIGE BEIGE BEIGE
LIGHT BROWN LIGHT BROWN LIGHT BROWN LIGHT BROWN LIGHT BROWN

Adhesive:
Side to side edging: 100 mm (3-9/16") is recommended. Hole drilling should be avoided when installing adhesives to prevent cracking of the surface. Narrow gaps may remain between bricks, however applying adhesives to two parallel sides is not sufficient to ensure adhesion.
TAKEHIGO

A series to match a modern Japanese interior. Its texture looks good in both Japanese and Western style rooms.

RIB STONE

The natural taste lines wrap light and produce a profound wall.
**ANCIENT WOOD**

Patterned to resemble the elegant graining of weathered wood. Different styles can be achieved by installing the tiles vertically or horizontally.

New natural

The smooth light tones and elegant design create a chic interior space.

New natural

The smooth light tones and elegant design create a chic interior space.
NEW JURAKU

A fusion of ceramic ware style and traditional earth wall texture gives a feeling of warmth. It will match both Japanese and Western style interiors.

The traditional Japanese earth wall ‘tsuchikabe’ has evolved into a new form.

HONTSUCHIKABE

PASTEL

The pastel colors give a feeling of reassuring calm. A Western-Style earth wall series that will brightly and softly highlight any bedroom or children’s room.

IVY

Creates an elegant European atmosphere of formal beauty. Recommended for use in bedrooms and other private areas.
ECOCARAT MOLDING SYSTEM
and DECORATIVE MOLD MATERIALS

WOODY MOLD
Blends in with wall paper, inside corners and baseboards, creating beautiful edges and streamlining the look of the room.

CORK MOLD
Cork has a unique combination of a warm look and flexibility. Thumb tacks or pins can be directly stuck in the cork, thus providing more opportunity for decoration.

DECORATIVE MOLD MATERIAL (for the wall)
Can be used as a fitting material for edges of interior walls, or as a finishing material such as a decorative mold between different materials, and so on.

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<table>
<thead>
<tr>
<th>Property</th>
<th>INAX measure</th>
<th>unit</th>
<th>Method of Testing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water absorption</td>
<td>23-25</td>
<td>%</td>
<td>ISO 10545-3</td>
</tr>
<tr>
<td>Mohs hardness</td>
<td>3.5</td>
<td>—</td>
<td>Mohs hardness</td>
</tr>
<tr>
<td>Flexural strength</td>
<td>6</td>
<td>N/mm²</td>
<td>ISO 10545-4</td>
</tr>
<tr>
<td>Breaking strength</td>
<td>120</td>
<td>N</td>
<td>ISO 10545-4</td>
</tr>
<tr>
<td>Density</td>
<td>1.7</td>
<td>g/cm³</td>
<td>INAX original method</td>
</tr>
<tr>
<td>Frost resistance</td>
<td>Not applicable</td>
<td>—</td>
<td>ISO 10545-12</td>
</tr>
<tr>
<td>Chemical resistance</td>
<td>No damage</td>
<td>—</td>
<td>INAX original method</td>
</tr>
<tr>
<td>Thermal expansion</td>
<td>&lt;5.0X10⁻⁶</td>
<td>/ °C</td>
<td>Thermal expansion meter</td>
</tr>
<tr>
<td>Amount of moisture absorbed and released</td>
<td>300&lt;</td>
<td>g/m²</td>
<td>INAX original method</td>
</tr>
</tbody>
</table>
We all want to raise our children in a safe indoor environment.

ECOCARAT Reduces VOCs and cleans the air.

ECOCARAT has innumerable micro-pores which has power to reduce VOC by chemical (ionic) adsorption. Chemical absorption is very strong. Therefore, absorbed chemical substance is not released. If there is possibility that it is released the amount of it, which is released, is very little. Therefore, increasing the concentration level of VOC in the room suddenly will not happen.

**Absorbs formaldehyde and toluene.**
Absorbs and reduces VOC (Volatile Organic Compounds) such as formaldehyde and toluene which are emitted by building materials and furniture, negatively affecting the body.

**Customer’s voice**
Say Goodbye to Sick Building Syndrome! (Mr. S)
A year after moving into our new house, symptoms of SICK BUILDING SYNDROME appeared. Then I decided to install ECOCARAT which I had heard it absorbs harmful substances. And three months later the symptom have been reduced and we no longer get rash on or faces, so that we are not worried about going out in public anymore. We can also sleep much better and we are no longer stressed out so much.

ECOCARAT - Zero emission of formaldehyde.
Solvants and plasticizing agents containing harmful chemicals such as formaldehyde and toluene are not used as raw materials for ECOCARAT.

**ECOCARAT has acquired “Formaldehyde Reduction Building Material Accreditation”**
ECOCARAT is the first domestic building material to gain “Formaldehyde Reduction Building Material Accreditation” from the Building Center of Japan Foundation. This accreditation is only given to materials which meet strict standards of formaldehyde reduction and keep reduction capabilities even with changes in the internal environment such as temperature and humidity.

**Comparison of rates of reduction of three major foul smells**

<table>
<thead>
<tr>
<th>Material</th>
<th>Reduction rate (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECOCARAT</td>
<td>100</td>
</tr>
<tr>
<td>Diatomaceous earth wall</td>
<td>70</td>
</tr>
<tr>
<td>Specified level in guidelines of Ministry of Health, Labour and Welfare (Japanese)</td>
<td>0%</td>
</tr>
</tbody>
</table>

**Recommended to people who have given up on owning a pet due to unpleasant pet odor.**
As it absorbs odors associated with pets, air of interior spaces are kept fresh. This is a wall material that will bring a smile to the faces of those who have been thinking “I would love to have a pet, but I just couldn’t handle the smell…”

**Reduce Odors**

We always notice the house odor of other peoples’ houses. Is your house odor free? Reduces unpleasant everyday odors. A fresh environment for both family and visitors.

**Better at deodorization performance than diatomaceous earth walls.**
The smells of toilets, cigarettes, pets, and household garbage are among the most offensive smells that occur in our everyday life. ECOCARAT reduces these smells by adsorbing ammonia, and other substances which are the causes. ECOCARAT has better deodorization performance than diatomaceous earth wall.

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Absorbs humidity and controls condensation.

4 to 5 times the humidity control capability of diatomaceous earth wall.

Humidity level in a room changes depending on the temperature and the climate during the course of a day. ECOCARAT absorbs moisture when the humidity level is high, and conversely, it releases the moisture into the air when the humidity level is low. Thus it prevents excessive dampness and dew condensation, and it contributes to create an environment that is gentle for your throat and skin while reducing excessive desiccation.

What is the secret of its excellent humidity control capabilities?

The secret is in its micro pores, only a millionth of a millimeter across, which control humidity. As ECOCARAT has lots of pores than diatomaceous earth, it can absorb and release much larger quantities of moisture.

Dew condensation of windows reduced to less than 1/15 (comparison with ECOCARAT).

The higher humidity becomes, the more moisture ECOCARAT absorbs to control the rise in interior relative humidity and control the formation of dew condensation.

Customer’s voice

I no longer have to wipe dew condensation off my windows every morning. (Ms. D)

Wiping up the dew condensation, which would form in such amounts that it ran over the bottom of the window frames, was part of my daily routine every morning. But, after I remodeled and installed ECOCARAT on the walls of the room, the condensation has virtually disappeared.

We all want to keep interior spaces clean for our health.

It inhibits the spread of mold and mites, which can cause allergies.

Prevents high levels of humidity liked by mold and mites.

Mold and mites spread easiest in environments at over 80% humidity. As ECOCARAT functions to control humidity, extremes of humidity are rarer and you can expect a reduction in the spread of mold and mites.

ECOCARAT will absorb mold-causing condensation with ease.

ECOCARAT is suitable for use in highly humid places since it is made of material which hardly gets moldy.

ECOCARAT is a ceramic material manufactured by firing natural raw materials at a high temperature Since ECOCARAT hardly gathers mold, it can most effectively be used in highly humid places, such as lavatories.

A fully registered and certified Humidity Control Building Material!

ECOCARAT has been certified as Japan’s first Humidity Control Building Material by the Japan Construction Material and Housing Equipment Industries Federation. The Federation evaluates and certifies Humidity Control Building Materials which meet predefined standards of humidity control capability. ECOCARAT has gained double certification as a Formaldehyde Reducing Building Material.
Determining the Ability of ECOCARAT to Reduce the Odour and Formaldehyde Concentration in the Indoor Climate

The results of the testing show that ECOCARAT has a very high ability to reduce the formaldehyde concentration, when a material load of 2.2 m²/m³ ECOCARAT tiles are used. The tests were carried out according to a modified version of EN 717-1.

In the test period of approximately 26 days, in which ECOCARAT was placed in the chamber, the chamber concentration of formaldehyde emitting from continuously emitting source (MDF board emitting 0.12mg/m³) was reduced to below 0.01 mg/m³.

By the following analysis for control of absorbed formaldehyde it could be seen that the ECOCARAT tiles do not re-emit formaldehyde.

The informative odour evaluations show that ECOCARAT has an effect on the odour from diluted ammonia, ash and linoelum but not on limone.

The evaluation of odour according to Danish Society of Indoor Climate showed that ECOCARAT improves the odour of asphalt.

Testing of ECOCARAT Interior Ceramics

During the spring 2005 DTI has tested various absorption/desorption humidity/water properties of Eocarat ECO-303/AI — according to ISO 3130.

The results of the tests can be summarised to:

- Can absorb up to 2 litres of water per m² in less than 2 hours
- Has shown good ability to absorb and release humidity from surrounding climate (up to 250g/m²/24 hours), which may be of importance for the control of indoor climate (relative humidity)

INAX Corporation
Address: 5-1, Keihintomari, Tokoname, Aichi, Japan

July 18, 2002
July 18, 2007 (Renewal)

Note: This is the responsibility of INAX Corporation.

Evaluation Report attached
**Scope of Application**

**Applicable place**
- (interior walls free from splashes of water) → Living room, toilets, powder room, kitchen, entrance, corridors, etc.

**Not applicable place**
- (places which are subject to splashes of water) → Outdoors, bathrooms, floors, space around microwave oven (back of kitchen), etc.

**Recommended Area of Application**

<table>
<thead>
<tr>
<th>Place of application</th>
<th>Recommended application area</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bedroom (approx. 9 m²)</td>
<td>4 to 5 m²</td>
</tr>
<tr>
<td>Bedroom (approx. 12 m²)</td>
<td>5 to 7 m²</td>
</tr>
<tr>
<td>Living room (approx. 18 m²)</td>
<td>8 to 10 m²</td>
</tr>
<tr>
<td>Toilet room (approx. 1.5 m²)</td>
<td>2 to 3 m²</td>
</tr>
</tbody>
</table>

* The recommended application areas shown above are based on the results of full-scale experiments and simulative tests using numerical analysis.

**Note for Renovation with ECOCARAT**

If the existing bed is moldy, please remove the mold before installing ECOCARAT.

**Flow Chart**

1. Bedding inspection
2. Allocation
   - Process
     - Making irregular shape
     - Making hole
   - Smoothen cross section
3. Installation
   - Adhesive application
   - Lay combed trail
4. ECOCARAT application

**Allocation**

- Mark the horizontal and vertical base lines.
- When allocating the ECOCARAT, pay attention not to allocate small cut piece at the end.
- If allocation space is to take only a small piece to be completed, prepare 2 cut pieces, each has a width equivalent to one-half of the sum of that space left. Then, allocate them on one side and another, or put them together.
- Use care that the edges of any piece do not come to the position of a power outlet or power switch. It makes difficult the cutting and drilling work.
- Leave a clearance of 1 to 5 mm at each reentrant angle between ECOCARAT and any other material.

**Proper allocation** (1 cut piece at either side)
- Small cut piece

**Improper allocation**
(1) Straight cutting

- To cut an ECOCARAT piece straight, first give a straight cut in the piece using a pencil cutter, plastic board cutter, or rotary cutter. And then, sever the piece into 2 parts by pushing one side. In so doing, hold down the entire part of the other side on a solid stand.
- Use a hand sander to make the cut faces smooth.
- It is recommended that ECOCARAT be cut in the back to reduce the possibility of chipping.
- Especially the series with textured surface.

(2) L-shaped cutting and channel-shaped cutting

[When a trimmer is used]

- A trimmer produces a smooth cut face.
- Before cutting ECOCARAT, it is necessary to mark the cutting line on the back (especially the series with textured surface).

[Cutting hole for power outlet]

- A hole for a double-socket power outlet can be cut in ECOCARAT by moving a trimmer bit along the 4 sides of the opening provided in the holder plate on the cutting stand.
- Mark on the ECOCARAT with horizontal and vertical centerlines of the power outlet.
- Align the centerlines marked on the ECOCARAT to the centerlines that have been marked on the outside of the opening in the holder plate.
- With both the holder plate and the ECOCARAT fixed with the fixing plate, cut the ECOCARAT by using a trimmer.
- Changing the direction of the cutting stand as required makes the cutting work easier.
- When cutting a rectangular hole other than the one for a power outlet, use the procedure for cutting L's.
Applying ECOCARAT

- Apply the ECOCARAT pieces to the bed without joint. For INAMENT RC-S (another adhesive), stack the pieces one on another.

- Note that joint grouting is not applicable.

- When applying the ECOCARAT, pay attention to the alignment of joints. As far as possible, make the necessary adjustment during the application work.

- Apply the ECOCARAT pieces by hand according to the allocation plan.

- Do not use a mallet, etc. to strike the pieces onto the bedding. It can cause damage to ECOCARAT.

- Keep a clearance of 1 to 5 mm at the reentrant angles and at the joints between ECOCARAT and any other material.

- At some early time during the application work, peel off 1 or 2 ECOCARAT pieces and make sure that the adhesive has stuck to at least 60% of the area of the back of each piece. If that rate is lower than 60%, the adhesive thickness is insufficient or the pieces have not been kneaded enough. Reapply the pieces positively.

- If the adhesive comes out of a gap between ECOCARAT pieces, immediately remove it by using a spatula, etc.

- After applying all the pieces, inspect the condition of the finish. If there are stained pieces, clean them. Hand stains can be easily removed by using a plastic eraser or a piece of cloth damped in detergent and squeezed tightly.

- The surface must be flat and dry when applying on mortal base walls.

Application Materials & Tools

**Adhesive**

<table>
<thead>
<tr>
<th>Product</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECO1-N1-20KG</td>
<td>For end joint</td>
</tr>
<tr>
<td>ECO2-10KG</td>
<td>For side joint</td>
</tr>
<tr>
<td>ECO3-1KG</td>
<td>For corner joint</td>
</tr>
</tbody>
</table>

- Carefully spread and applied using abowel. Comes in an environmentally friendly mono-pack sachet. A tube type is available for panel application.

**Carat CAULK**

- Low VOC
- Adhesive Caulking & repairing agent

**INAMENT RC-S**

- Ceiling application use
- ECT-P7

- Ceiling Use
- Ceiling use
- ECT-P

**Tools for exclusive use with ECOCARAT**

- Rotary Cutter
- Grid Saw
- Cutting Stand(with scale)
- Ruler(with cutter guides)
- L-Shaped Ruler
- Sandpaper
- Dust Mat
- Starter Kit Case

**Application Method (application with adhesive)**

1. Checking the bed

   - First, check the bed surface for flatness. If it is not flat, repair with putty or other suitable material (when the bed is gypsum board). Gypsum board (5/8 or 3/4 inch) or calcium silicate board is recommended for the bed.

2. Applying the adhesive

   - Apply the specified adhesive (SUPER-ECONUR) to the bed in a compound pattern.

3. Applying ECOCARAT

   - Press the ECOCARAT uniformly into the bed. ECOCARAT does not require joints. Use of the Spacer shown above makes joint alignment easier. (When the bed is mortar, keep a 0.3 to 1 mm joint.)

4. Inspecting the finish

   - Check the condition of the finish for stains, chips, etc. Stains from hands can be removed with an eraser. See page 54 for maintenance methods.
Even the "fit" of ECOCARAT is beautiful.

ECOCARAT pieces and tiles fit together naturally.
A wide variety of construction methods such as glazing, tapering of edges, and corking make a beautiful fit possible.

Wall corner and internal angle fit
On wall corners, use single-sided tapered edge type or side glazed type ECOCARAT.
Apply with the designated CARAT CAULK (joint width approx. 1 to 2mm) or seal with a sealant of a similar color.

Around power outlets, don’t seal up or seal with CARAT CAULK (joint width approx. 1 to 2mm) or seal with a sealant of a similar color.

Fit with tiles using Decorative Mold Material
Use Decorative Mold Material between ECOCARAT and tiles, then seal the joint between tiles and Decorative Mold Material using a sealant of similar color.

Fit with the floor
ECOCARAT is installed resting on top of the baseboard. Installation with commercially available baseboards is also possible in the case that the baseboard is thinner than ECOCARAT, the thickness of the board can be adjusted by tacking on plywood.

Application for the bed of board and concrete wall
When the bed is board, applying no joint. Make an opening (joint width approx. 0.5 to 1mm) for the concrete bed.

Fit with walls using CORK MOLD
Apply adhesive (SUPER-ECONUR) to the bed using a tootched trowel. As CORK MOLD does not have notched edges, apply it directly.

Fit with the ceiling using a WOODY MOLD border
WOODY MOLD absorbs the cut edges of ECOCARAT, hiding them from view. Attach with adhesive and nails.

Fit with other materials using WOODY MOLD
Decorative Mold Material (WOODY MOLD) not only hides the cut edges of ECOCARAT, but also blends it with wallpaper and painted areas. Attach with adhesive and nails.

Fit with paints using Decorative Mold Material
Use Decorative Mold Material between ECOCARAT and paints, then don’t seal up or seal with a sealant of a similar color.

Easily alter the mood of a room with Molding.
The sharp lines of Molding will add just the right highlight to a room.
Routine maintenance

- Hair dyes
- Urine spray
- Mud
- Toilet detergent

ECOCARAT is a ceramic material, thus depending on the condition in washrooms and lavatories in residential houses is possible)

Stains requiring caution

- Coffee / Tea
- Oil-based pens
- Resins
- Inks
- Paints

Maintenance of ECOCARAT

- Toilet detergent
- Others
- Crayon
- Resins
- Inks
- Paints

CAUTION

- Inks
- Resins
- Inks
- Paints

Items not to be used for cleaning

- Dirty clothes
- Sand erasers
- Hard kitchen sponges
- Metal scourers

Stain Removal Methods

- Coffee / Tea
- Ketchup / Mayonnaise
- Soy Sauce / Sauce

- Hair dyes
- Mud
- Others

- Remove residual trash etc. using a moistened cotton swab or similar.
- Dab on chlorine-based bleach (unlicated) with a cotton swab or similar.
- Leave the stain for approximately 24 hours and it will fade.

- Lipstick
- Others

- Remove as much of the residual paste as possible using a plastic spatula or similar.
- Rub of any residue with a plastic eraser.
- Wipe the surface with a well-wrung clean cloth or a moistened cotton swab or similar.
- Repeat steps 2 and 3 until the stain has been removed.

- Toilet detergent
- Others

- Dab on chlorine-based bleach (unlicated) using a cotton swab or similar.
- Leave the stain for approximately 24 hours and it will fade.
- The stain remains, repeat steps 1 and 2.

If ECOCARAT is scratched

- Small scratches, chips and cracks can be made to disappear using CARAT CAUK, the coupling and repairing agent designed for exclusive use with ECOCARAT. If a commercially available touch-up pen is used, the damage is particularly noticeable, please contact your local trader about reparation.

CAUTION

- ECOCARAT is a porous ceramic material and therefore absorbs water easily. Avoid use in places which are exposed to water or where water is used frequently (shower room, kitchen back walls, etc.) or where there is a risk of staining by dirty water during cleaning (commercial kitchens, window back of public lavatory, etc.). Avoid using in washrooms and laundries in residential houses is possible.

- ECOCARAT is a ceramic material, thus depending on the condition of the bed (firmness and so on), there may be gaps of a few millimeters between pieces.

- When installing ECOCARAT on an RC bed, gaps of 0.5 to 1mm are required so the finished product and photographs showing installation may vary slightly.

- On wall surfaces that have not been sufficiently insulated in reinforced concrete buildings with limited air circulation, and where interior environments are subject to continued humidification by burning gas stoves and so on; ECOCARAT may not be sufficient to fully control condensation on reinforced concrete walls. Please consider utilizing alternative methods in combination with ECOCARAT.

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- Ketchup / Mayonnaise
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- Hair dyes
- Mud
- Others

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- Repeat steps 2 and 3 until the stain has been removed.

- Toilet detergent
- Others

- Dab on chlorine-based bleach (unlicated) using a cotton swab or similar.
- Leave the stain for approximately 24 hours and it will fade.
- The stain remains, repeat steps 1 and 2.

If ECOCARAT is applied in a living room, can items such as pictures and clocks still be hung on the walls?

Q

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ECOCARAT is effective in reducing chemicals such as formaldehyde, and therefore is suitable for rooms such as living rooms and bedrooms. ECOCARAT should not be used in shower-rooms, because of their high levels of humidity, or in areas surrounding cooking areas in kitchens, as ECOCARAT would absorb oil.

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Weights cannot be hung on ECOCARAT walls themselves. Please use screws or similar that are suitable for drilling through the ECOCARAT, and that can be affixed to the reinforcing wall beneath. If the wall is gypsum board, ensure that this is fixed to a stud or column.

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Condensation forms when humid interior air comes into contact with cold windows or exterior walls. ECOCARAT’s tiny holes prevent buildup of excessive humidity, and control condensation. Additionally, mold and mites proliferate in excess humidity, but ECO- CARAT helps prevent excessive moisture buildup, thereby helping to control the spread of mold and mites.

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Frequently Asked Questions of ECOCARAT
How is the effectiveness of ECOCARAT different from the moisture-absorbing agents and activated charcoal that are put in closets and so forth?

Moisture-absorbing agents that are put into closets absorb any moisture that is present, but eventually lose their effectiveness and must be discarded. The extremely tiny holes in activated charcoal mean that it is more effective than ECOCARAT in absorbing moisture; however, the smaller size of the holes means that the absorbed moisture is not released, even if the surrounding air dries out. ECOCARAT features holes that are sized to work with the relative humidity, and that have the capability of gently releasing this moisture to prevent dryness.

How big an area of ECOCARAT is necessary to reduce smells and adjust humidity in a room with a floor area from 39 sq. ft (3.6 m²) to 84 sq.ft (7.8 m²)?

For a floor area of 39 sq. ft, about 32-43 sq. ft of ECOCARAT is recommended.

For 84 sq. ft, about 43-54 sq. ft of ECOCARAT is recommended.

Floor area of room | Recommended ECOCARAT quantity
--- | ---
17-53 sq. ft (1.65-5 m²) | 32-43 sq. ft (3-4 m²)
53-106 sq. ft (5-10 m²) | 43-54 sq. ft (4-5 m²)
106-142 sq. ft (10-13 m²) | 54-75 sq. ft (5.7 m²)
142-213 sq. ft (13-20 m²) | 75-107 sq. ft (7-10 m²)
More than 213 sq. ft (more than 20 m²) | Half of floor area

* The above calculations are based upon an assumed room height of 8.2 feet.

How long does it take to remove the smell of cigarettes, pets and garbage? It would be very helpful if there were some numerical values derived from experiments conducted in rooms in which the recommended quantities of ECOCARAT were applied.

| Main smell | Component that causes smell | Time for reduction in smell |
--- | --- | ---
Toilet and cigarette | Ammonia | 30 minutes
Garbage and pets | Methyl Mercaptan | 120 minutes
Garbage and cigarettes | Hydrosulfuric acid | 30 minutes
Garbage | Trimethylamine | 60 minutes

Experiment conditions:
1. Size of room: 17.2 sq ft (1.6 m²) floor, 8.2 feet (2.5 m) height -> 141 cubic feet (4 m³).
2. Area of ECOCARAT: 140 sq. ft (13 m²).

Due to the fact that the experiment was carried out in a near air-tight area, results in actual rooms are likely to be more efficient.

Is it possible to use ECOCARAT in sports arenas?

ECOCARAT can be applied on any interior walls are not exposed to direct moisture.

ECOCARAT absorbs smells and VOCs* through chemical absorption. Smells and VOCs form a chemical union with ions on the ECOCARAT surface. Chemical absorption efficiently and quickly absorbs smells and VOCs, and releases them very slowly at very low levels.

* VOCs: Volatile Organic Compounds such as formaldehyde, toluene, etc.

What is the maximum amount ECOCARAT can absorb?

1. ECOCARAT can absorb a maximum of 9000mg/m².
2. The functionality of ECOCARAT is maintained for approximately 43 years in a typical toilet. These results were obtained under the following testing conditions.

Testing Conditions:
Room Size: 17.2 sq.ft (1.6 m²) floor, 8.2 feet (2.5 m) height -> 141 cubic feet (4 m³).
Quantities of Ammonia per day: 0.56ppm (0.43 mg/m³)
Area of ECOCARAT: 32 sq. ft (3 m²)

These sizes are available by cutting 303x303mm ECO-CARAT. Prices depend on the size and series.

* ECOCARAT series are available in rectangular shapes in different sizes, as listed in the line-up section.