

**azbil**  
**FIELD**

Honda Motor Co., Ltd.  
Saitama Factory Yorii Automobile Plant

**azbil**  
**MIND**

As the azbil Group's front-end technology trading company, we provide value and superior products from around the world



## Special Feature

**A traditional Japanese art that  
breathes life into candy**



# A traditional Japanese art that breathes life into candy

An *amezaiku* (candy art) stall is one of the regular attractions at the festivals in Japan. In just a very short period of time, the heated and softened candy ball is transformed swiftly and skillfully into the shape of a living creature that seems ready to start moving at any moment. It is a traditional craftsmanship.

We interviewed Mr. Shinri Tezuka, Representative of Asakusa Amezaiku Ameshin and foremost amezaiku craftsman.



## Traditional performance art

Asakusa Amezaiku Ameshin, an amezaiku studio, is located in Asakusa, a tourist destination city in Tokyo. A wide variety of amezaiku



### Shinri Tezuka

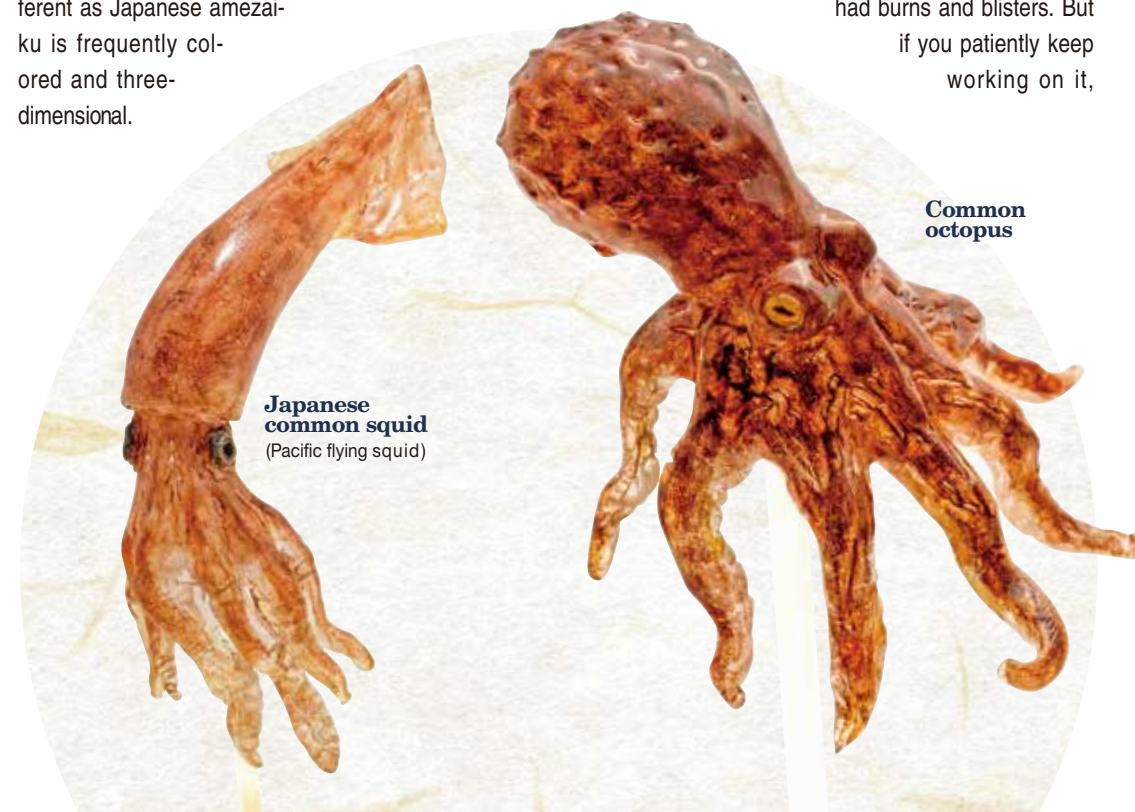
Founder and CEO  
Tezuka Arts & Crafts Co., Ltd.

Mr. Tezuka was born in Chiba Prefecture in 1989. He is self-taught in the art of the amezaiku techniques and stands out as an amezaiku artist. He opened "Asakusa Amezaiku Ameshin," an amezaiku studio, in 2013.  
<http://www.ame-shin.com/>

ku is made in Ameshin, but what has made Mr. Tezuka famous overnight is the amazingly realistic amezaiku he creates which is completely different from stereotypical traditional amezaiku. His excellent unparalleled techniques fascinate everyone who sees him working. But what in the world is amezaiku?

"Amezaiku, or candy art, is found in various places of the world. One of the well-known varieties is the one performed in China. The craftsman allows liquefied candy to drop down to draw a picture instantaneously. This results in a two-dimensional artwork. Amezaiku is popularly performed in Europe as well. They frequently decorate wedding cakes with roses and buildings made of candy. They

characteristically make various parts with candy and stick the pieces together by heating and softening to make a three-dimensional shape. Amezaiku in Japan is similar to the Chinese amezaiku in the way that it is done to allow the customers to enjoy watching the production process as well, but is different as Japanese amezaiku is frequently colored and three-dimensional.



I believe that this type of amezaiku is uniquely Japanese."

Amezaiku is a street culture that started before the Edo Period (1603–1867). In a stall at festivals, etc. the craftsman sells candy to the customers passing by. According to customer order, the craftsman right then and there deftly turns the candy heated until soft into a three-dimensional figure that looks so alive that it seems to start moving right away. We may say that Japanese amezaiku is a performance art partly because the completed product has value as a craft and partly because the customer enjoys watching the process of production.

## A three-dimensional figure that looks as if it is ready to move is completed in a very short period of time

The motifs are basically living creatures. Rabbits, birds, horses and dogs are frequently created. Amezaiku works with these motifs are produced in Ameshin, but the most popular motif is the goldfish.

Mr. Tezuka calmly scoops up a handful of candy hot in a pot and starts kneading it.

"At first, the heated candy has a temperature of about 90 degrees centigrade. Therefore, it is generally not possible for a person to scoop up the right amount of softened candy. He/She very well knows that the candy is hot, but drops it out of reflex. For the first six months, I dropped countless scoops of softened candy and perpetually

had burns and blisters. But if you patiently keep working on it,

the skin of your hands becomes thicker and more resilient to heat. You will become mentally strong as well and no longer feel pain."

Mr. Tezuka keeps moving his hands without a moment's break. He makes cuts with a pair of small scissors, and in an instant, you see a graceful-looking tail fin and pectoral fin, and before you know it, the shape of a goldfish is completed. Without losing a moment, he makes stripe patterns on the fin, rhythmically using the blade of the scissors. The thin fin with the pattern looks as delicate as lace and seems as if it will start moving gracefully at any moment. The process up to this point has taken only three to four minutes. "Now it is too hardened to work on," says Mr. Tezuka, lightly tapping on the surface with his scissors.

## No room for playing tricks: Ultimate manufacturing

Amezaiku is a race against time. The temperature of hot candy at 90 degrees Celsius will drop to about 50 degrees in less than a minute and the candy rapidly hardens. While the voluminous belly part of the goldfish stays soft a little longer, the thin fins quickly cool to harden, and then, it is no longer possible to clip them with a pair of scissors. The reason why an amezaiku craftsman performs a variety of tasks, including clipping, lifting of small parts and making of patterns, all with a pair of scissors is because he/she simply has no time to switch to some other tool even if he/she wants to.

Mr. Tezuka repeatedly switches on and off the burner to apply its flame momentarily to various parts of the goldfish amezaiku that has been formed into its basic shape. Before long, the whitish goldfish becomes glossy and beautifully transparent.

"During the shaping process, creases appear on the surface. The heat melts the creases away and makes the surface smooth to bring back the original transparent appearance of candy. By coloring candy in this state, the beauty unique to amezaiku is realized. You can create a brilliant texture with amezaiku by using transparent candy unlike clay or wood sculpture. It is characteristic of amezaiku that if you color it with a sense of transparency, you can achieve a fresh and uplifting feeling. As the feature is brought out clearly es-



After a rough form is made with the hands, various parts are created by clipping and making patterns with a pair of scissors.

pecially when an aquatic organism is the motif, fish and amphibians are popular as a motif. A goldfish and *nishikigoi* (colored carp) with their beautiful colors and molluscs such as octopus and squid in particular are my favorite motifs and I enjoy making them."

The colored goldfish, completed in about 20 minutes from the start of the manual work, looks as real as the real thing. Mr. Tezuka regards amezaiku as a live performance art to show everything before the audience.

"You make a three-dimensional piece that looks as real as possible in as short a time as possible to surprise and fascinate the audience. It's showtime for your skills. You can easily make your customers enjoy to a certain degree by making cute things by deforming, but if you think that's enough, you will never make any more progress as an amezaiku craftsman. I think we craftsmen should not simplify techniques for our work. I currently have seven apprentices, but I myself am still undergoing training. We will never be satisfied with our skills. We will keep changing the techniques and motifs, capturing the feelings of the time and seeking high-quality expressions. These series of activities may, as a result, come to be called a "tradition" someday in the far future."

Mr. Tezuka's pursuit of techniques will never end.

\*Live amezaiku demonstration and sales are available in the store in Tokyo Skytree Town (Nearest train station: Oshiage).  
<http://www.ame-shin.com/en/>



# Honda Motor Co., Ltd. Saitama Factory Yorii Automobile Plant



**Within Honda Motor Co., Ltd., Saitama Factory's Yorii Automobile Plant functions as a sort of mother factory for cutting-edge production technology. As part of its safety efforts, the plant has introduced a control system for furnaces that is compliant with JIS B 8415, the latest Japanese industrial combustion safety standard. The system is used on automobile production lines for paint booth air conditioning, paint drying, and deodorization facilities. In addition, the plant is preparing to distribute this know-how to Honda's production bases around the world.**

*With safe combustion control compliant with the latest JIS regulations, Honda aims to achieve safe operation by adopting cutting-edge technology*

Holding out the ideal of developing useful technologies to help people, Honda Motor Co., Ltd., since its founding in 1948, strives to develop technology and products that bring happiness to customers around the world. In recent years, with its HondaJet, Honda has established itself as a manufacturer of aircraft for business, in addition to its main business areas, namely automobiles and motorcycles. In this way, the company continues to challenge itself, using its global slogan, "The Power of Dreams," as an engine to propel itself forward.



Combustion facilities are safely controlled by burner interlock and burner control modules programmed to execute a combustion process compliant with revised JIS regulations.

Honda's Saitama Factory, which consists of Sayama Automobile Plant, Yorii Automobile Plant, and Ogawa Plant, accomplishes the entire process of automobile production, from pressing of the auto body parts to welding, painting, and assembly, and serves as a manufacturing point for Honda's other 68 production bases located in 27 countries (including Japan). The Yorii facility in particular, which has been in operation since July 2013, stands out as one of the largest production sites in Japan, producing 250,000 cars annually. Honda employs all sorts of advanced technology in this plant in order to reduce environmental impact by minimizing CO<sub>2</sub> emissions from the manufacturing process, and also to improve product quality. Honda expects the factory to be a "mother factory" that shares her knowledge with overseas production bases.

"For the Yorii Automobile Plant, adoption of the most advanced technology was a requirement already in the plant construction plan, not only for the environment and for quality, but also for safety, which is the most important thing on the production line. Particularly for automobile production lines, the air conditioning of paint booths, where strict

control of temperature and humidity is required, and the safe control of gas burner combustion, which is a very important function in the drying stage after painting and the exhaust deodorization stage, were the main concerns," says Yuji Ito, an engineer in the Production Supervisory Unit.

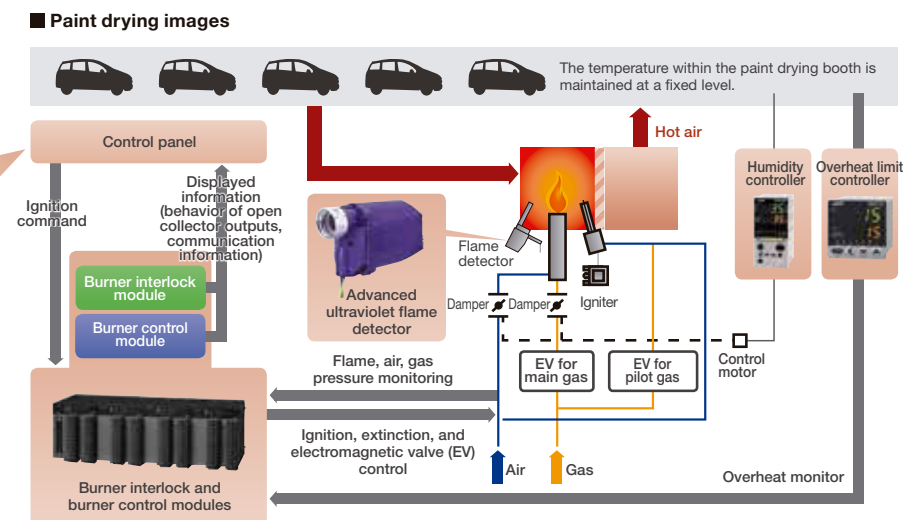
"Our company has had and operated strict internal regulations, namely explosion and fire safety standards, for processes in which fire is used. In recent years public standards have also been reviewed or established, and since JIS B 8415,\*1 related to the safety of combustion equipment, was revised, we thought that, if we aim to be on the cutting edge of operational safety, we should comply with the revised JIS regulations," says Yoshiyasu Kogo, the chief engineer of the Yorii Management Department.

## Seeking the best equipment layout to properly control combustion

Honda first compared the new JIS regulations and its explosion and fire safety standards, and then began deliberations on introducing systems and equipment that would make its combustion control functions compliant with



Drying furnace and control panel for combustion equipment in the automobile production line



the revised standards. As a result, the company decided to incorporate Azbil's combustion safety system, which uses burner interlock and control modules, into Yorii's paint booth air conditioning, paint drying, and deodorization facilities.

"At that time, Azbil had begun providing products and solutions that met the revised JIS regulations before the rest of the industry. Also, since we were already using Azbil's combustion monitoring system at the Sayama Automobile Plant, we had confidence in Azbil," says Mr. Ito.

The work of installing the new combustion safety control system began, in order to meet the schedule for startup of the Yorii Automobile Plant. However, various difficulties had to be overcome before the start of plant operation.

"By installing Azbil's system and executing its program, we were able to control the facilities according to the new JIS regulations, but the installation of the gas units and valves had to be examined carefully in order to control them properly. We were confronted with some problems; for example, when starting the furnace, the burners did not ignite well because of the timing, which was due in part to timer settings that were made with safety in mind," explains Mr. Kogo.

Thereafter, Honda revised the installation of its devices through trial and error, adjusting their physical positions to achieve proper system operation.

"Although it took a half year just for the adjustment work, because we had to apply the same process to 8 air conditioners and 16 furnaces, the plant began operation on schedule. Right up until the start of the plant, Azbil always assisted us promptly by, for example, quickly sending engineers to the site when requested," says Mr. Ito.

## Combustion safety control system ensures safety and helps to improve production dependability

Drawing on the experience gained at the Yorii Automobile Plant, Honda Motor Co., Ltd., is now considering revision of part of its explosion and fire safety standards. Its plans include preparing the combustion safety control systems that can be used at all of its production bases around the globe, and sharing the Yorii plant's know-how. Honda has already been installed this combustion safety control systems at the company's production base in Mexico, and it will be installed next at other bases in Brazil and China.

"The greatest achievement we've made is in ensuring a higher level of safety for our combustion equipment and dependable production. In fact, in the past two years, we have never had a safety problem in the combustion process," says Mr. Ito.

"What we have achieved is not only clarifying the items to monitor in the combustion process including a more detailed grasp of the supply of fuel and combustion air and the ignition of the burner, but also monitoring all the items with a single system. If a glitch occurs somewhere in the process, it is easy to find the cause by examining the process, and that enables us to find prompt solutions," says Mr. Kogo.

Honda says that it will analyze the large amount of operation data it has accumulated so far and provide on-site workers with optimal information so that more dependable and efficient production can be achieved in the future.

In Mr. Ito's view, "Azbil has helped us confidently and promptly throughout the project by drawing on its profound knowledge of

control systems and by providing us with highly dependable control devices. We are looking forward to Azbil's continuing assistance with our attempts to improve production capabilities."

## Honda Motor Co., Ltd. Saitama Factory Yorii Automobile Plant



Location
2354 Tomida, Yorii-machi, Ohsato-gun, Saitama-ken, Japan
Start date of operation
July 2013
Business scope
Automobile body pressing, welding, painting, assembly, product inspection



**Yuji Ito**  
Engineer  
Production Supervisory Unit  
Saitama Planning and  
Administration Office  
Integrated Strategic  
Management Department  
Saitama Factory Sayama Plant



**Yoshiyasu Kogo**  
Chief Engineer  
Yorii Management  
Paint Maintenance  
Saitama Factory Yorii Plant

## glossary

### \*1 JIS B 8415

A Japanese safety standard related to industrial furnaces. It was revised in 2008. It stipulates safety requirements for facilities using gaseous or liquid fuel as the heat source.



## As the azbil Group's front-end technology trading company, we provide value and superior products from around the world

Azbil Corporation is one successor company to Yamatake Shokai, which was established for the import and sale of advanced machine tools from North America and Europe, but it was Azbil Trading Co., Ltd., that inherited Yamatake Shokai's role as a trading company. As the azbil Group's front-end trading company, we proactively search for superior products from around the world from the perspective of customers. By combining these products with those provided by the azbil Group, we provide high value-added products and services, together with technical expertise, for our customers.

*Our function as a trading company with technical expertise continues from the company's founding to the present without interruption*

The azbil Group seeks to create value in the form of people's "safety, comfort and fulfillment," based on the Group philosophy of "human-centered automation." The origin of these ideas can be traced back to Yamatake Shokai, which was established by Takehiko Yamaguchi



**Nobuo Shimizu**  
President and CEO  
Azbil Trading Co., Ltd.

on December 1, 1906 for the import and sale of advanced machine tools from North America and Europe. As the business grew, its manufacturing function was transferred to the present Azbil Corporation, while Yamatake Shokai, which was operating as a trading company which also offered technical expertise, merged with Azbil Royal Controls Co., Ltd., in April 2013 to form Azbil Trading Co., Ltd. In this way, the spirit of the original company has continued without interruption.

Currently, Azbil Trading specializes in providing devices, technology, and technical expertise related to measurement and control. We provide high value-added products both from Japan (including azbil Group products) and from around the world to our customers, mainly in the industrial fields covered by Azbil's Advanced Automation (AA) business.

*We support safety at production sites in terms of both products and services*

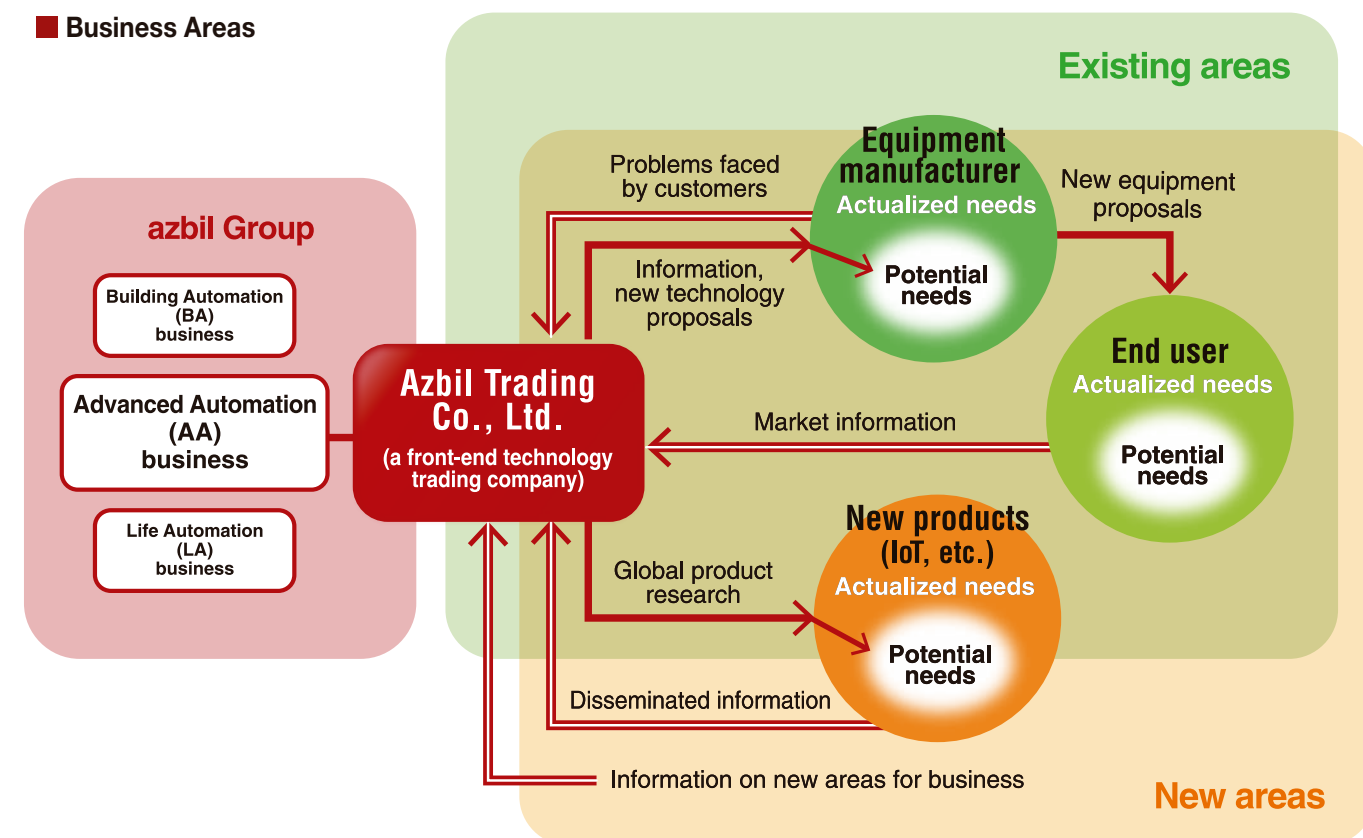
Safety, including machinery safety and preventive safety, is an area of particular focus for Azbil Trading.

For machinery safety at plants and

factories, which face chronic labor shortages and difficulties in handing down technological know-how, an important theme is how to prevent industrial accidents caused by mechanical equipment.

In Japan, Azbil Trading has long been in the forefront of initiatives related to machinery safety. For example, Azbil Trading immediately dispatched staff to Europe for investigation when we learned from the 1989 European Machinery Directive that CE marking would be implemented in Europe, where safety-related activity was relatively advanced. We played an educational role through activities such as inviting specialists from Europe to come to Japan to provide information for industry, the government, and academia. In 1993, we began the import and sale of safety devices made in Europe for installation on machine tools, and after the implementation of the directive in 1995, we expanded our sales activity for machinery safety devices. In response to demand from machine tool manufacturers in Japan, we established a way of doing business whereby we imported safety devices from Europe, and then Japanese manufacturers exported their machine tools

### Business Areas



with the imported safety devices installed to the European Union. We continue to provide a wide range of machinery safety products.

For preventive safety, Azbil Trading provides products that utilize infrared thermography technology to a broad range of customers, such as a thermography-based pass-fail inspection system developed by Azbil Trading that uses infrared cameras. Our thermography products are popular among a wide range of customers. In addition to helping to prevent accidents by monitoring abnormal heat in various types of equipment and systems, these products are also used for purposes such as monitoring the temperature of manufactured goods to help ensure quality.

Also, we offer site walk-through services, provided by one of our many qualified safety assessors. These assessors are certified to identify sources of danger at the worksite, to evaluate risk, and to devise risk reduction measures. Together with the custom-

er, they walk around the site and suggest safety countermeasures for problems and hazardous locations, based on safety standards. The proposed countermeasures are customized to take best advantage of the features of the site's equipment and applications.

*Our role in the azbil Group is to sense the changing situation of customers and global markets*

As the front-end trading company of the azbil Group, which also offers technical expertise, we will continue to proactively search for superior products from around the world that will help to solve various problems faced by our customers, focusing on measurement and control devices. By combining these products with Azbil's AA business products and other products supplied by the azbil Group, we aim to provide high value-added solutions. When we provide third-party products, we verify

the quality of the products according to the azbil Group's stringent standards, and we also rigorously inspect the sites where the products are manufactured. In addition, we intend to strengthen our business through "seed-orientation," where customer needs that are not yet actualized are identified by looking at advanced products in the market. This includes such areas as the IoT (Internet of Things), which currently is getting attention from all sides, which we see as a business area for particular focus. We are working at a fast pace to develop solutions in collaboration with Azbil Corporation to greatly broaden the potential of the IoT, including equipment diagnosis technology, which we have already implemented.

Azbil Trading will continue its role of sensing customer and market trends on a global scale in order to increase the business of the whole azbil Group by contributing to the development of our customers' businesses.

**Radiant heat is the heat generated when electromagnetic waves discharged from a hot object are received.**

## *The Sun's gift, delivered from 150,000,000 km away*

The Earth receives a huge amount of energy from the Sun. This energy constantly warms our planet and can be utilized by us. However, the distance from the Sun to the Earth is approximately 150 million kilometers. By what mechanism does the energy reach us?

When the temperature of an object rises, it emits electromagnetic waves and transmits heat to the surrounding area. This phenomenon is called *radiation*, and the heat transferred at this time is called *radiant heat*.

The surface temperature of the Sun is around 6,000 K. The surface emits sunlight, which includes electromagnetic waves such as visible light, infrared light, and ultraviolet light. Electromagnetic waves can pass through space and gas. When these electromagnetic waves collide with another object, the object absorbs heat.

The electromagnetic waves emitted from hot objects penetrate the air and other objects and transfer their heat to the other objects.

In other words, when sunlight reaches Earth and hits other objects such as the ground, people, or buildings, it is converted into heat that warms the objects.

## *Making homes more comfortable by reducing radiant heat generation*

The position of the Sun in the sky varies according to the season and time of day, causing changes in temperature that make us feel hot or cold. At midday, sunlight shines from a high overhead position. Light that arrives from above has greater energy than light that arrives from the side. A correspondingly larger amount of sunlight is received, generating more radiant heat.

Also, the temperature in a room often does not decrease even when nighttime arrives, and instead the heat of the day remains. This is also related to radiant heat. When buildings receive light from the Sun during the day, the heat generated is stored in the structural components of buildings, causing the temperature of the building itself to increase. The building then starts to emit electromagnetic waves. As a result, people in the rooms inside feel

hotter because they directly receive the electromagnetic waves emitted from the walls, furniture, and floor.

Furthermore, because electromagnetic waves can be transmitted through air and glass, sunlight directly warms the floor and other objects in the room. This also causes the room to become hot.

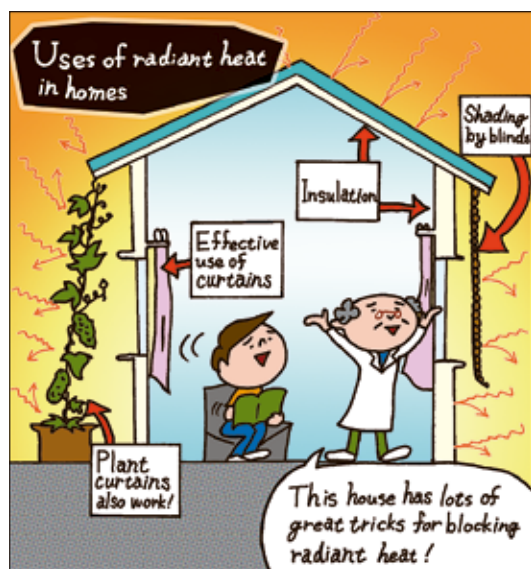
To make the room temperature more comfortable, it is important to effectively shield the sunlight to reduce the generation of radiant heat. Examples of effective methods include installing a shade or positioning plants with many leaves outside the window.

## *Low-energy air conditioning using radiant heat*

The electromagnetic waves that penetrate the air warm objects such as walls, floors, and people by being absorbed by them. Therefore, the effects of radiant heat cannot be sufficiently eliminated only with an air conditioner that warms or cools the air. One available mechanism is to reduce the radiant heat by absorbing the electromagnetic waves from warmed objects or space. This can be done with a radiant ceiling panel.

When cooling the room, the radiant panel is cooled to make the entire ceiling cold by absorbing radiant heat from the walls, floor, and people. Conversely, when heating the room, the radiant panel is heated to emit electromagnetic waves from the panel and warm objects in the room through radiant heat.

Using radiant ceiling panels greatly improves the effectiveness of indoor cooling and heating. In office buildings, the installation of radiant ceiling panels that use waste heat from the air-conditioning heat source or from renewable energy (such as rainwater, geothermal heat, or rivers) is one method with potential use in systems that consume close to zero energy when building facilities are running.



©ad-manga.com

**azbil**

<http://www.azbil.com/>

Yamatate Corporation changed its name to Azbil Corporation on April 1, 2012.

azbil Group PR magazine, azbil 2018 Vol. 1, No. 8  
Issued by Mikako Takahashi, Public Relations Section, Corporate Planning Department, Azbil Corporation  
19F Tokyo Building, 2-7-3 Marunouchi, Chiyoda-ku, Tokyo 100-6419 Japan TEL: 81-3-6810-1006 FAX: 81-3-5220-7274  
URL: <http://www.azbil.com/>



The azbil Group is forging ahead while respecting the natural environment. All rights reserved. Unauthorized reprint or reproduction of materials in this magazine is prohibited.

PR-3001E-1801 (1801-4K-D)

Cover photo by Koji Mizutani, MERRY PROJECT Representative

Company/Branch office

Azbil's radiant temperature sensor measures the thermal radiation on the ceiling at locations such as the space close to a window. Thermal radiation is one element that affects how people feel heat. People indoors can be made more comfortable if the temperature of thermal radiation is reflected in the settings of air conditioners.

