



Astec irie Corporate Profile





Thank you very much for your exceptional patronage as always. We have built a history of over 100 years, guided by the spirit of our corporate philosophy of "Trust." I would like to express my heartfelt gratitude to all our predecessors, employees, and stakeholders who have supported the company thus far. Thank you once again.

Nowadays, with the rapid advancement of technology and globalization, the pace of social change is accelerating exponentially. In addition to significant societal shifts such as work-style reforms and lifestyle changes, we are also confronted with major challenges such as the geopolitical risks that have become apparent and require our attention.

For our company to continue being a pioneer in shaping the future, it is imperative that we address and resolve various management challenges that lie ahead.

We will first take on the challenge of building a foundation for the future, while aiming for further growth and development. To effectively convey the technological expertise and values accumulated over our 100-year history to all stakeholders, we have recently revamped our corporate brochure.

Our journey for the next 100 years has already begun.

We will continue to value connections between people, strive to be a company that people will choose, and work hard tirelessly. We sincerely ask for your continued patronage and support in the future.

President and CEO

Shinichiro IRIE

Corporate Philosophy and Management Principles

For over 100 years, we have walked alongside the government-operated Yawata Steel Works.

As a cargo-handling subcontractor for the Yawata Steel Works which started operations in 1901, Kensuke Irie founded the company in 1910. Since then, we have been engaged in the iron business for over a century.

Corporate Philosophy

Later, after Nobuaki IRIE became President and Chairman, he based the company motto on the belief that "the foundation of corporate management must be built on the establishment of trust between management and employees," inheriting the spirit of trust passed down through generations.



Management Principle

1. We aim for the sustainable growth of the company and the development of our business, working towards fostering trust among employees, customers, and shareholders.
2. We strive to build a culture where mutual respect and strong teamwork enable individuals to unleash their full potential.
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Company Profile / Offices

Company name:Astec Irie Co., Ltd.

Head office location:3-1-1 Nishihonmachi, Yahatahigashi-ku,
Kitakyushu-shi, Fukuoka, 805-8507, Japan

Representative:President and CEO Shinichiro Irie

Capital: 100 million yen

Founded: February 1910
Corporation establishment: February 1957

Fiscal year end: July

Customers: NIPPON STEEL CORPORATION. Mitsui High-tec, Inc.
Dai Nippon Printing Co., Ltd. TOPPAN Holdings Inc.
JX Metals Corporation. DAIWA HOUSE INDUSTRY CO., LTD
Proterial, Ltd. KYOCERA Corporation.
OSAKA STEEL CO., LTD. Something Co.,Ltd.
MITSUI KINZOKU TRADING CO., LTD.
Sumitomo Electric Industries, Ltd.
Ohkuchi Electronics Co., Ltd.

Bank: Mizuho Bank, Ltd. The Bank of Fukuoka, Ltd.
THE NISHI-NIPPON CITY BANK, LTD.
Mitsui Sumitomo Trust Bank, Limited.
Fukuoka-Hibiki Shinkin Bank.
The Shoko Chukin Bank, Ltd.

Annual sales: 12.4 billion yen (year ending July 2023)

Number of employees: 741 (year ending July 2023)

[Head office location]
3-1-1 Nishihonmachi, Yahatahigashi-ku, Kitakyushu-shi,
Fukuoka, 805-8507, Japan
TEL(093)661-1221 FAX(093)661-7155

[Marketing & Commercial Division]
TEL(093)661-1223 FAX(093)681-5081

[Equipment Division]
TEL(093)661-1225 FAX(093)661-7155

Branch / Factory

[Yawata Branch]
46-93 Oaza Nakabaru Sakinohama, Tobata-ku, Kitakyushu-shi,
Fukuoka, 804-0002, Japan (Kyushu Steel Works Yahata District)
TEL(093)872-5013 FAX(093)881-5327

[Oita Branch]
1 Oaza Nishinosu, Oita-shi, Oita, 870-0902, Japan
(Kyushu Steel Works Oita District)
TEL(097)558-1202 FAX(097)551-5906

[Hikari Branch]
3434 OazaShimata, Hikari-shi, Yamaguchi,743-0063, Japan
(Kyushu Steel Works Hikari Steel Pipe Department)
TEL(0833)71-0952 FAX(0833)72-5493

[Fine Metal (FM) Division Office, Hibiki Factory]
10-83 Kouyoumachi, Wakamatsu-ku, Kitakyushu-shi,
Fukuoka, 808-0002, Japan
TEL(093)701-5684 FAX(093)701-5687

[FM Division Yahata Factory]
46-93 Oaza Nakabaru Sakinohama, Tobata-ku,
Kitakyushu-shi, Fukuoka, 804-0002, Japan
TEL(093)872-5713 FAX(093)872-5710

[FM Division Hirohata Factory]
1 Fujicho, Hirohata-ku, Himeji-shi, Hyogo,671-1123,
Japan (Setouchi Steel Works Hirohata District)
TEL(079)237-7117 FAX(079)237-6653

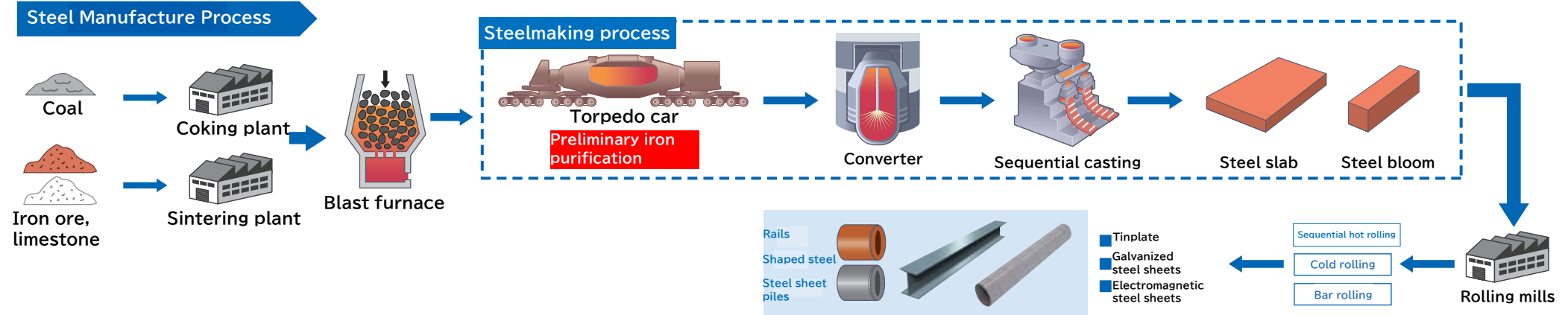
[Fine Ceramic Division Sakai Factory]
1-16-61 Fukasaka, Naka-ku, Sakai-shi, Osaka, 599-8253, Japan
TEL(072)278-7733 FAX(072)278-7714

[Fine Ceramic Division Hibiki Factory]
10-83 Kouyoumachi, Wakamatsu-ku, Kitakyushu-shi,
Fukuoka, 808-0002, Japan
TEL(093)701-5066 FAX(093)701-5067

[Osaka Branch (Marketing & Commercial Division)]
Shin-Osaka Strong Building 603, 1-9-16 Nishinakajima,
Yodogawa-ku, Osaka-shi, Osaka, 532-0011, Japan
TEL(06)6195-6412 FAX(06)6195-6413

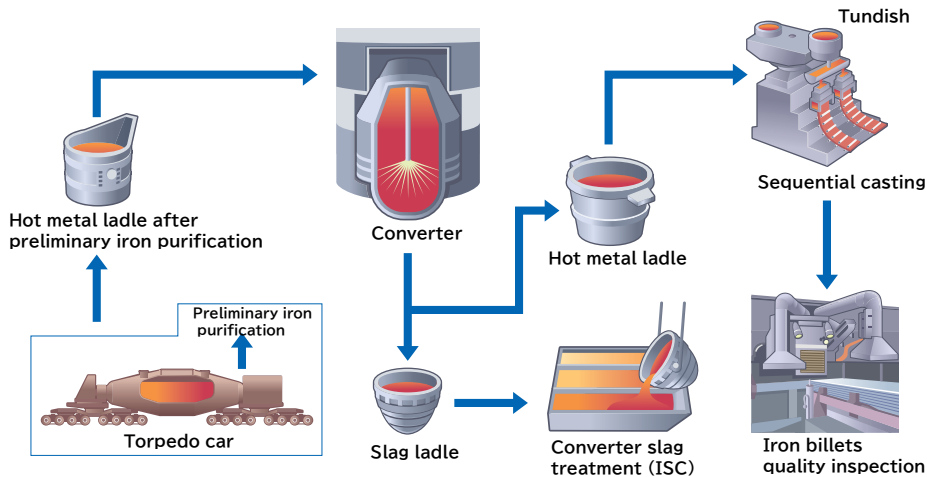
Iron Business

We aim to be the best steel company by providing our unique technologies and facilities in the core process of steel manufacture: preliminary iron purification (adjusting the components of molten iron); slag treatment (removing slag produced in the manufacturing); sequential casting; fire-resistant application; conditioning, inspection, and processing of steel pipes; and so on.



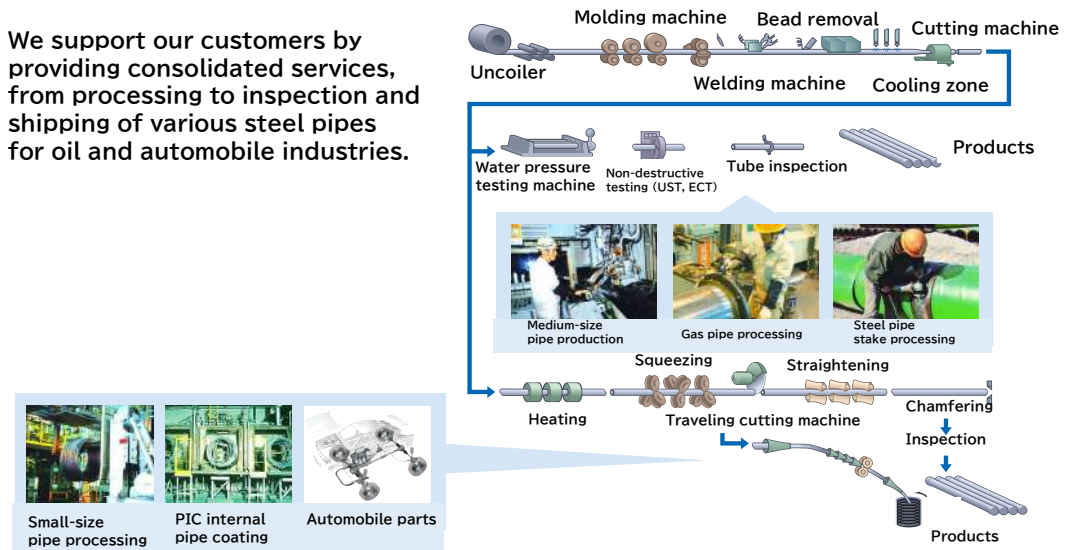
Steel Manufacture (Yawata and Oita Branches)

We support our customers by providing our unique technologies to operate critical processes in steel manufacture, in order to design, produce, install, and maintain each facility.



Steel Pipes (Hikari Branch)

We support our customers by providing consolidated services, from processing to inspection and shipping of various steel pipes for oil and automobile industries.



Processes of Steel Manufacture and Steel Pipes Production Handled by Astec Irie

Steel manufacture (refining, slag treatment, and fire-resistant application)



Preliminary iron purification

Reduction processing of impurities (sulfur) in hot metal



Fire-resistant application

Application of brick and irregular refractory materials for hot metal ladles



Iron billets quality inspection

Quick evaluation test of iron billets after sequential casting



Industrial water treatment

Treatment of water for dust collection generated in steel manufacture



Converter slag treatment (ISC)

Instant freezing of impurities (slag) produced in converter, from 1,600° C to 350° C



Fire-resistant tundish maintenance

Application of brick and irregular refractory materials for tundish used in sequential casting

Steel pipes (conditioning, inspection, and processing)



Inspection and processing of steel pipes external surface



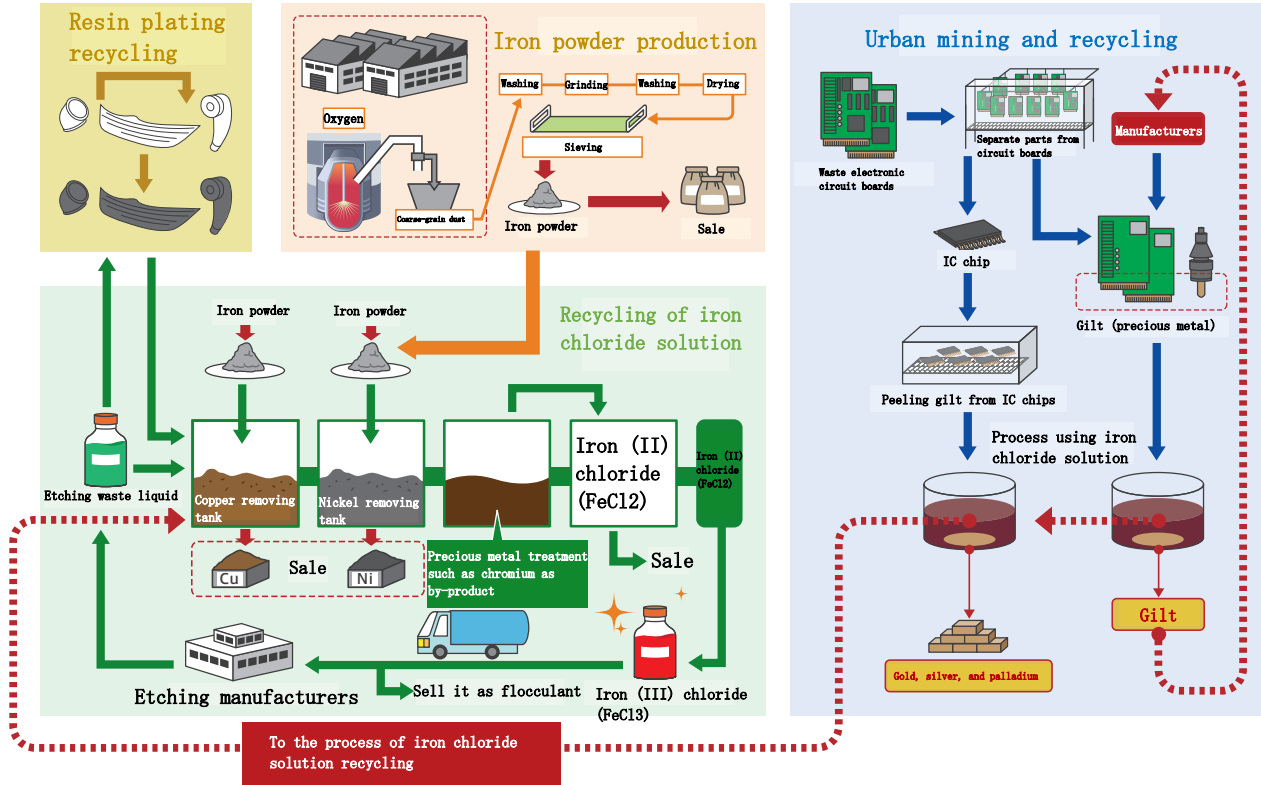
Packing and shipping

Environmental Recycling Business

We have also taken on the challenge of applying the technology and know-how we have cultivated over more than 100 years in the iron business to new fields.

The environment and recycling business that entered the world of chemical reactions has now become a major pillar of our business and has also led to the development of a new business called urban mining.

Entire Business Flow



Manufacturing and sales of iron powder

Floating dust generated in the steel mill converter process is collected using a dust collector, and the coarse-grain dust recovered from the collected dust is used as raw material for manufacturing.

The main uses are for chemical reactions, stainless steel cutting, specific gravity sorting, etc.

iron chloride solution recycling business

We collect valuable metals dissolved from etching waste liquid (waste iron chloride) and regenerate and recycle them.

Copper/nickel (powder/briquette manufacturing and sales)

We perform briquetting (molding) processing on copper powder and nickel powder recovered through iron chloride solution recycling and sell them as various metal raw materials.

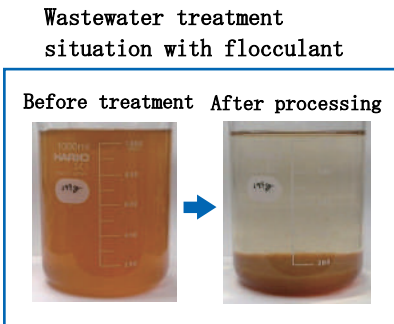
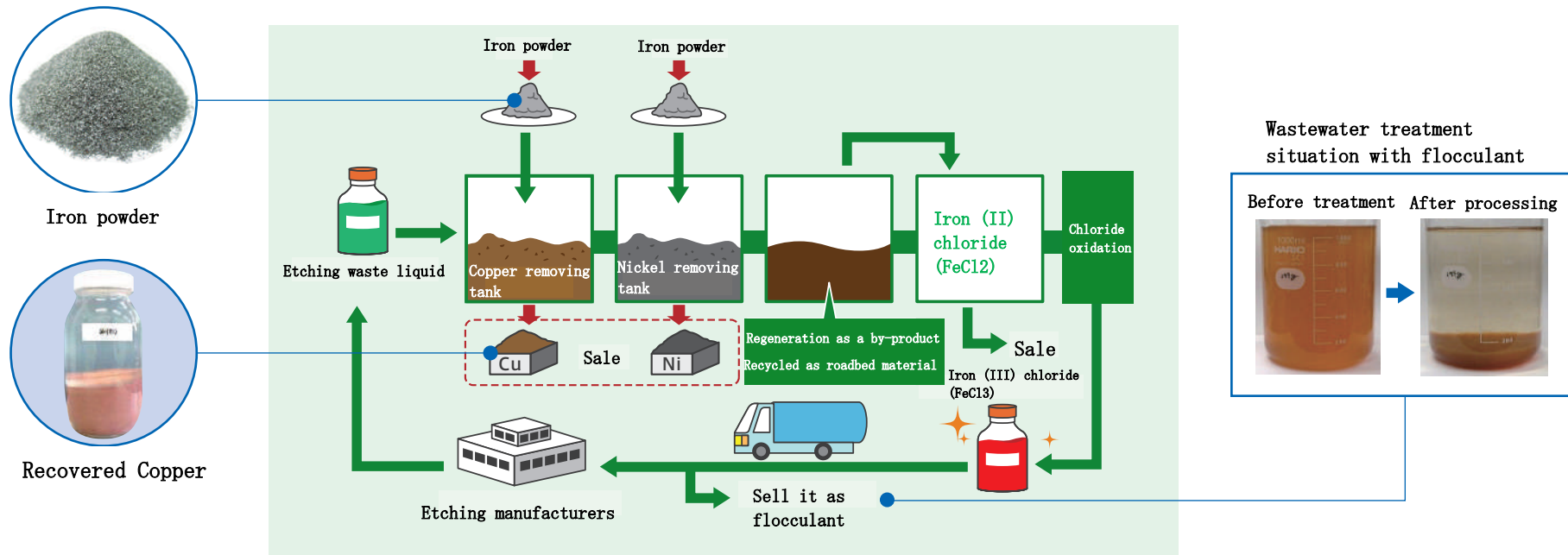
Urban mining and recycling business

We separate and sort electronic components from waste electronic circuit boards contained in electronic devices without crushing the boards, and collect and recycle various metals.

Iron Chloride Liquid Recycling Business

Iron (III) chloride, which is used for surface processing (etching) of printed circuit boards and IC lead frames, contains metals such as copper and nickel. At our company, we recover used iron chloride solution from etching manufacturers and use iron powder refined from coarse-grain dust to recover metals such as copper and nickel using our unique technology. At the same time, iron chloride solution is recycled. The recovered copper and nickel are sold as metal raw materials, and the iron chloride solution is sold not only for etching purposes but also as a wastewater treatment agent (flocculant).

Iron Chloride Liquid Recycling Flow



Resin plating recycling

We collect resin-plated products used in automobile parts such as front grills and door mirrors, as well as faucets, etc., and separate and recover the resin and valuable metals using an iron chloride recycling system.



door mirror

Peeling Recovery



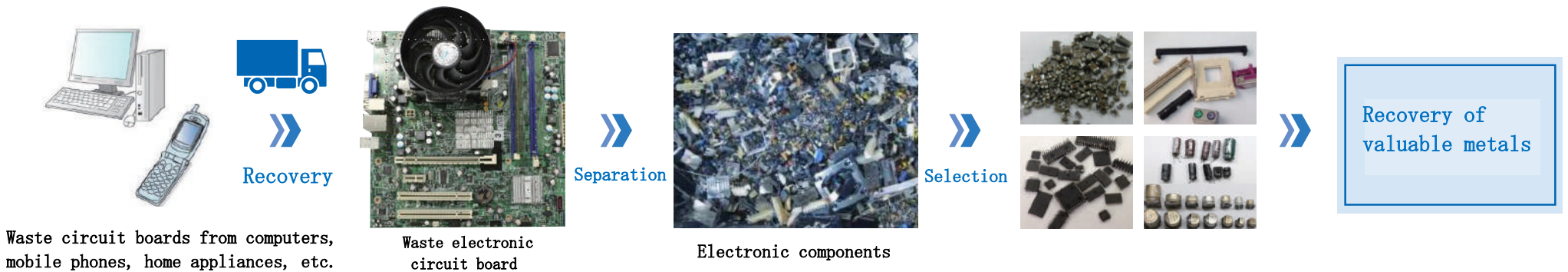
detachment

Urban Mining and Recycling Business

Waste electronic circuit boards collected from home appliances such as used computers and mobile phones have electronic components containing various valuable metals.

Our company uses superheated steam and iron chloride solution to separate and recover electronic components and recycle valuable metals.

Recycling flow



Separation/sorting method

Separation of electronic components



Electronic component separation equipment (HS)

By efficiently melting solder with superheated steam, which has excellent heat conductivity, and adding a unique peeling function, it is possible to separate electronic components that are difficult to disassemble.

Sorting of electronic parts



Electronic component sorting system (AIS)

Electronic components separated from waste electronic circuit boards are sorted with image recognition using AI learning.

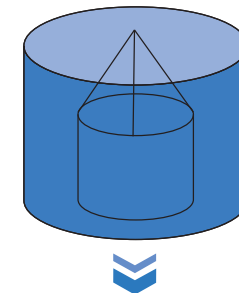
Gold recovery using iron chloride solution

- Gold-plated board
- Socket/connector
- Decorations



The base of the gold plating is copper or nickel

Iron chloride solution reaction tank



Recovery of copper and nickel, recycling of iron chloride waste liquid



Collection of gold

Development of Urban Mining and Recycling

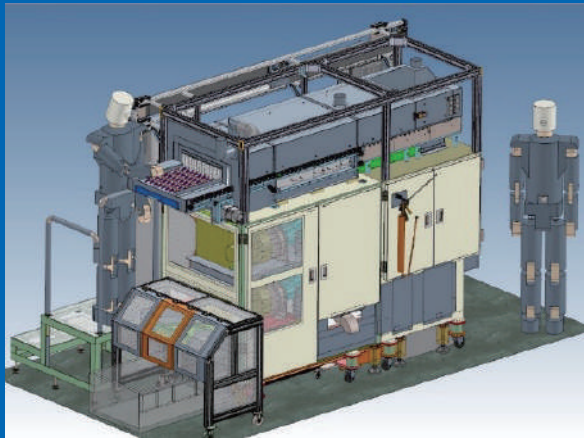
Sales of urban mining equipment Astec-System

都市鉱山事業の紹介動画はこちら。



With the Astec-System, it is possible to extract unrecovered metal that cannot be recycled as a substrate.

HS (Heat Separator)

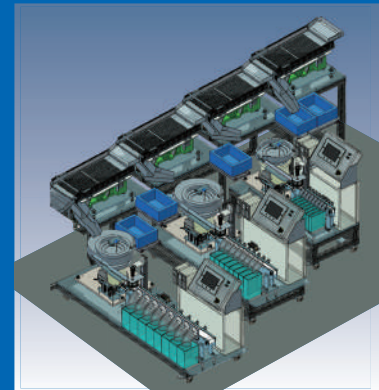


Using superheated steam and our unique peeling mechanism, we can efficiently recover electronic components from waste electronic circuit boards.

Compact design allows space-saving installation.

項目	仕様
Equipment dimensions	L2,950mm×W1,200mm×H2,500mm
Equipment weight	Approximately 2,000 kg
Electronic component separation rate	90%
Maximum production capacity	65 t/month
Board dimensions	100mm×100mm~350mm×350mm
Maximum power consumption	50kw
Heating method	Electric heater and superheated steam

AIS (AI Selector)



項目	仕様
Equipment dimensions	L2,900mm×W2,900mm×H1,300mm(概略)
Equipment weight	Approximately 1,000 kg
Electronic component separation rate	85% (PC motherboard results)
Production capacity	Small parts (φ3 to 8): 3.5 kg/H Medium-sized parts (φ8 to 14): 6.0 kg/H Large parts (φ14 to 20): 16 kg/H
Target work:	Electronic components peeled off with HS
Classification method	Physical sorting by sieving machine (5 types by size); image sorting by AI (from φ8 to 20)

Effects of urban mining and recycling

Economic aspect

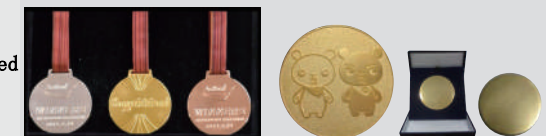
By separating electronic components and circuit boards, we can generate approximately 1.2 greater economic value compared to selling them as circuit boards or crushed circuit boards.

Environmental aspect

It is possible to recover metals (palladium and tantalum) that cannot be recovered using conventional technology. It also reduces the burden on the non-ferrous smelting process.

Utilization of recycled gold

Our recycled gold can be used for gold plating without gold refining. It is used in tournament medals and novelty items such as bookmarks in various sports.



Fine Ceramics Precision Processing

Fine ceramics, one of the key materials supporting the technological development of the 21st century, is second only to diamond in hardness, and its precision processing requires advanced technology and equipment.

Our company has been ahead of other companies in terms of researching and commercializing this processing since 1986, and has strived to constantly develop technology and improve our facilities.

Currently, we are highly regarded as a reliable partner by many manufacturers and research institutions.



Material to be processed

Alumina, silicon carbide, aluminum nitride, zirconia, and sapphire glass

Examples of processed products Semiconductor

manufacturing equipment parts, aerospace parts, and new material testing parts

* We will strictly maintain research and development and transactional confidentiality.

Machining accuracy

± 0.01 mm (machining)

± 0.002 mm (inner diameter honing)

± 0.002 mm (plane/cylindrical processing) Lap surface roughness 0.05 micron (Ra)

Main equipment

Sakai Factory

Machining center: 14 units

Ultra-precision forming grinder: 5 units

Precision surface grinder: 4 units

Cylindrical grinder: 3 units

Rotary grinding machine: 5 units

Wrapping machine: 1 unit

Coordinate measuring machine: 2 units

Surface roughness measuring machine: 2 units

Universal projector: 1 unit

Hibiki Factory

Machining center: 7 units

Ultra-precision forming grinder: 2 units

Precision surface grinder: 2 units

Cylindrical grinder: 3 units

Rotary grinding machine: 2 units

Coordinate measuring machine: 2 units

Surface roughness measuring machine: 1 unit

Casting Products for Residential Steel Pipe Piles

In 2000, our company collaborated with Daiwa House Industry Co., Ltd. to develop steel pipe piles, a method for reinforcing the foundations of houses. Steel pipe piles penetrate underground and are used to prevent uneven settlement of buildings on soft ground. By attaching circular wings to the tip of the steel pipe pile and creating a spiral shape, the construction time can be shortened and the number of piles to be constructed can be reduced by increasing the bearing capacity. In addition, we have adopted plug-type joints that do not require on-site welding, improving quality and operability.

What is the D-TEC PILE method?
(Rotating penetration steel pipe pile method)

Features

1. Low noise and low vibration compared to other foundation reinforcement
2. No leftover soil generated
3. Can manage all pieces reaching the support layer by measuring the turn torque
4. Stable quality by integrally molding the tip part with cast steel

鋼管杭工法

D-TEC PILE工法II

Pluggable fitting

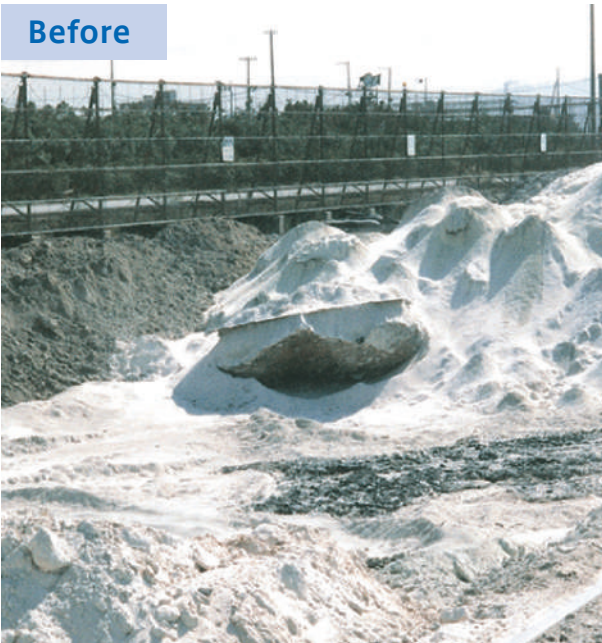


イラストは大和ハウス D-TEC PILE カタログより引用

Slag powdering prevention agent (KAILEX)



Before



Slag without KAILEX

After



Slag with KAILEX (before crushed)

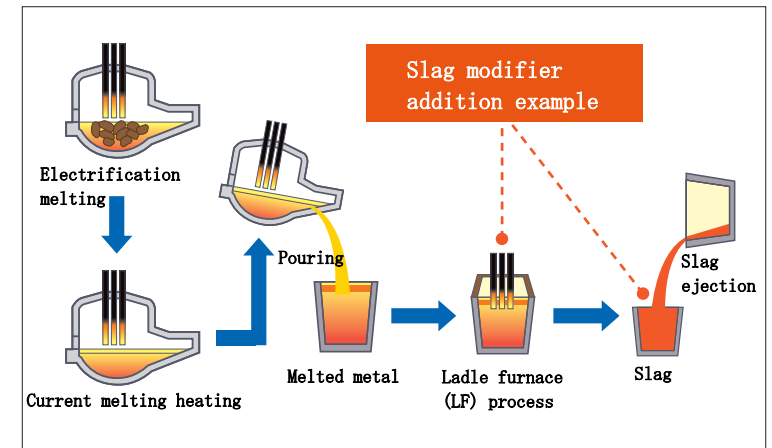
Slag powdering mechanism

The main components of slag, CaO and SiO₂, exist in the form of 2CaO · SiO₂ crystals, which expand in volume during crystal transition when the slag is cooled, resulting in the creation of powder.

Effect of using modifier

Our modifier has a large modifying effect. By adding a small amount, it prevents slag from becoming powder so it can be recycled.

- It can be used as a lime resource, slag for protecting slag pots, etc.
- It can be effectively used as roadbed material and asphalt aggregate.



Facilities Engineering / Belt Cleaner (MF-DIP Cleaner)

Facilities Engineering

Our engineering business has been progressing steadily thanks to our extensive experience in steel manufacture.

We grasp the precise needs of our customers and are involved in designing, producing, installing, operating, and maintaining facilities of every kind, making full use of our unique ideas and know-how.

In addition, we actively make suggestions to customers and develop our products to be more valuable.

Ladle tilting unit

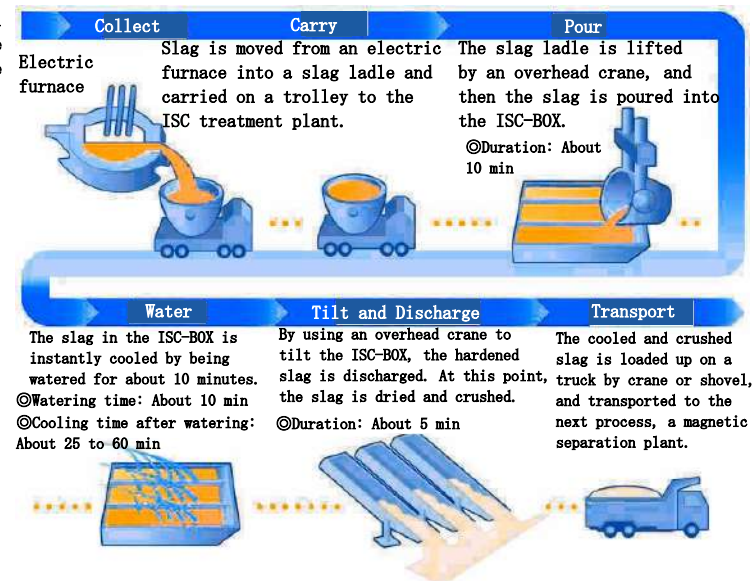


Slag skimmer



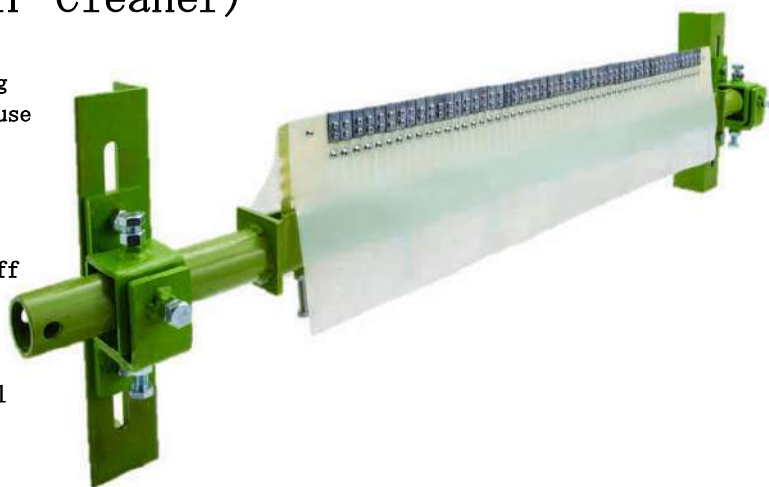
ISC Slag Cooling Treatment Facility

The forced-cooling system fosters the natural collapse in the slag cooling process, and the sliding collision from the ISC-BOX makes more it easier to break slag into small pieces.



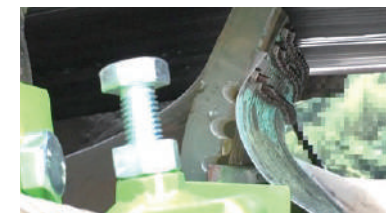
Belt Cleaner (MF-DIP Cleaner)

Belt conveyors are suitable for transporting large quantities of raw materials, but because there is resource loss due to ore falls and cleaning work for fallen objects, there are concerns about increased costs and negative environmental impact for ancillary work. A belt cleaner is indispensable to scrape off conveyed materials that have adhered to the belt. The MF-DIP cleaner developed by our company can also remove adhering materials that cannot be scraped off with conventional belt cleaners.



Features of MF-DIP cleaner

- Chip divided into 15 mm pieces
- Highly elastic urethane rubber
- Compatible with various conveyed items and belt sizes





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