KROSAKI HARIMA CORPORATION

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KROSAKI HARIMA CORPORATION 2023 Integrated Report

KROSAKI

2023 Integrated Report

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Editorial policy

- Our group issues the Integrated Report from this fiscal year. This report aims to help stakeholders understand the improvement of corporate value through our group's business activities, social activities, and environmental activities. We plan to enrich the content to further deepen your understanding in the future.
- The Environmental Report, which has described the environmental activities of our company group until last year, is incorporated into the Integrated Report. Henceforth, environmental activities are delineated in the Integrated Report.

Scope of the report

Period covered
April 2022 – March 2023
(including information on other periods as needed)

Companies covered
KROSAKI HARIMA CORPORATION and its group companies

Date of publication (Japanese edition)
December 2023

Notes regarding forward-looking statements
The descriptions of earnings forecasts and other statements regarding future prospects in the Integrated Report are based on information available to our group at the time of editing and certain assumptions that our Group deem reasonable, and actual performance may vary due to various factors.

About the logo of KROSAKI HARIMA

The symbol designed with the motif of the letter 'K' in 'KROSAKI' is the most important element of the logo. The symbol, composed of an active red triangle called the 'KROSAKI TRIANGLE' and a design of the letter 'K' with roots in the earth, has its own concept.

Active red KROSAKI triangle
The red triangle is a symbol that has traditionally represented "fire" and "infinity." "Fire" is closely related to KROSAKI's products, as you would expect. Red represents the passion poured into this. And "infinity" represents not only the current situation, but also the pursuit of development towards the future and unlimited potential.

The design of the letter 'K' with roots in the earth
The symbol "K" stands firmly on the ground, and takes root in the earth. It expresses the corporate attitude of pouring endless passion towards the realization of dreams. To convey the reliability, technological strength, modernity, contemporaneity, and growth potential of "KROSAKI," it is designed with a clear and light modern image.






— Vision —

The Krosaki Harima Group continues to strive to be "a world-class comprehensive ceramics company that is a leading value provider to steel and other industries" and "a company that contributes to realizing a sustainable society, the well-being of future generations, and the conservation of the Earth's environment."

We have been committed to the motto of "better, faster, and less expensive" since its establishment in 1919, and has played an important role in supporting Japanese key industries through the manufacture and sale of various refractories in the field of the material industry, including the steel industry. Furthermore, utilizing the technologies and expertise accumulated over 100 years in terms of refractories and heat management, we have been engaged in the Furnace Business, which involves the design and construction of high-performance and energy-efficient industrial furnaces, as well as the Ceramics Business, which mainly serves customers in the semiconductor manufacturing equipment and electronic components fields. We continue to strive with all our strength to take advantage of business opportunities and aim to be "a world-class comprehensive ceramics company that is a leading value provider to steel and other industries."

At the same time, companies are required to actively address social issues, including environmental ones, as important challenges in order to achieve sustainable social realization, not only business growth, and to create new values. The Krosaki Harima Group continues to be a good cosmopolitan company which is working to create new values that pursue harmony with people and nature and which continues to support the future of the Earth.

KROSAKI HARIMA Group Mission Statement

Mission

The Krosaki Harima Group is committed to playing an important role in global industrial development, and to contributing to the prosperity of society. To achieve this, we look to provide high-value products and technology in the field of ceramics worldwide through continuous innovation.

Business Goal

Provide No. 1 Value to Customers Worldwide

Our Pride

- Dedicated employees with independent thinking
- Work environment where technology achievements are made
- Corporate culture where individuality is encouraged
- Management that encourages a challenging spirit

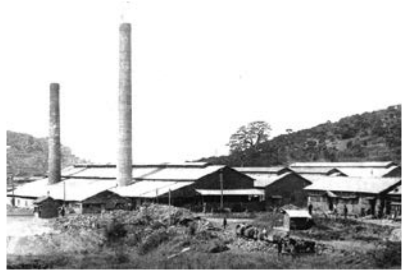
Management Policy

- We aim to be a trusted enterprise by providing the best quality, most reliable products to our customers.
- We make every effort to increase shareholders' profit by pursuing all activities which will enhance corporate value.
- We pursue co-existence and co-prosperity by sharing strategies with our partner enterprises.
- We respect the humanity of each employee, and provide opportunities for personal growth and self-realization.
- We obey the law as a sensible corporate citizen, and we meet the challenge of dealing with the Earth's environmental issues.

Innovation and Tradition - History of Krosaki Harima -

History of the KROSAKI HARIMA Group

Merger and acquisition
Capital participation or new establishment
Other transformation



The photo of the Yahata factory at the time of establishment

Founded by Kenjiro Matsumoto from Yasukawa Matsumoto Shoten and Sunao Kora who was a refractories engineer of the Yawata Ironworks

Products at the period of Forming business foundation

Produced open-hearth furnace ceilings, coke ovens, and silica stone bricks for hot stoves

Flow control products for continuous casting

Supply of value-added flow control products accompanying the customers' introduction of continuous casting

KROSAKI HARIMA Head Office

Krosaki Refractories merged with Harima Ceramic and Krosaki Harima was established in 2000

Krosaki Amr Refractarios, S.A. new plant

A new factory was built in Europe to strengthen the global manufacturing bases

TRL KROSAKI REFRACTORIES LIMITED

TATA REFRACTORIES LIMITED (now TRL KROSAKI REFRACTORIES LIMITED), the largest refractories company in India, was acquired as a subsidiary with the aim of expanding sales in India and other Asian countries

Start-up period 1919-1931
Forming business foundation period 1932-1938
Developing period 1956-1969
Restructuring period 1970-1990
Considering to enhance corporate structure period 1991-1999
Integration & expansion period 2000-2022

1918 Toyo Refractory Brick Co., Ltd.
1968 Toshiba Ceramics Co., Ltd.
2004 SN Refratecture Tokai Co., Ltd.
2002 Krosaki USA Inc. (KUI) (US)
2010 Krosaki Magnesita Refractories LLC (KMR) (US)
2018 Krosaki USA Inc. (US)
* Businesses of KMR transferred to KUI
2009 Krosakiharima Europe B.V. (Netherlands)
2015 KROHARI CHIKURO CORPORATION (Japan)
2022 Listed on newly established Tokyo Stock Exchange Prime Market
2003 Krosaki Harima (Shanghai) Enterprise Management Co., Ltd. (China)
Wuxi Krosaki Machinery Co., Ltd. (China)
2011 TRL KROSAKI REFRACTORIES LIMITED (India)
2016 TRL KROSAKI CHINA LIMITED (China)
2002 YINGKOU KROSAKI HARIMA REFRACTORIES CO., LTD. (China)

1919 Krosaki Refractories Co., Ltd.
1953 Krosaki Furnace Industries Ltd. (spin-off Furnace Construction Department)
1982 Krosaki Furnace Corporation
1956 Capital participation by Yawata Iron & Steel Co., Ltd.
* Yawata Iron & Steel Co., Ltd.: 52%;
Accepted transfer of furnace materials plant from Yawata Iron & Steel Co., Ltd.
1995 Wuxi Krosaki Sujia Refractories Co., Ltd. (China)
1949 Listed on Tokyo Stock Exchange
1999
2000 KROSAKI HARIMA CORPORATION

1920 1940 1960 1980 1990 2010 2020

1989 Krosaki Amr Refractarios, S.A. (Spain)
2018 Refractaria, S.A. (Spain)
2021 Refractaria Technologies, S.L. (Spain)

1916 Kyushu Refractories Co., Ltd.
1938 Japan Furnace Manufacturing
1950 Harima Refractories
1988 Harima Ceramic Co., Ltd.
2009 Shin-Nippon Thermal Ceramics Corporation
2012 ARIAKE MATERIALS COMPANY, LIMITED
2010 KROSAKI HARIMA CERA CORPORATION
2002 Kyushu Refractories Co., Ltd. made a subsidiary

■ 2021
Merged with KROSAKI HARIMA CERA CORPORATION (Apr.)
Merged with ARIAKE MATERIALS COMPANY, LIMITED (Oct.)

Historical timeline

1920 1940 1960 1980 2000 2010 2020

1923 Great Kanto Earthquake
1939 Outbreak of World War II
1945 End of World War II
1964 Tokyo Olympics
1970 Japan World Exposition Osaka 1970
1973 First oil crisis
1980 Second oil crisis
1985 Plaza Accord
1991 Collapse of "Bubble" economy
1995 Great Hanshin-Awaji Earthquake
2008 Global Financial Crisis Beijing Olympics
2015 Paris Agreement/2030 Agenda for Sustainable Development
2019 COVID-19 pandemic
2020 2050 Carbon Neutral Declaration of Japan

Business Targets ▶ pp. 3-4

Provide No. 1 Value to Customers Worldwide

Inputs

Manufactured capital ▶ pp. 17-18, 55-56

Global manufacturing facilities
20 plants
(13 in Japan, 7 overseas)

Capital investment
6.1 billion yen (FY2022)

Financial capital ▶ pp. 51-54

Total assets
163.3 billion yen

Equity ratio 45.0%

Human capital ▶ pp. 37-41

Consolidated number of employees
4,770

Multinational global human resources

Internal environments that put D&I into practice

Intellectual capital ▶ p. 26

Number of patents 659 (2022)

Accumulation of technologies and know-how cultivated for over 100 years

Natural capital ▶ pp. 35-36

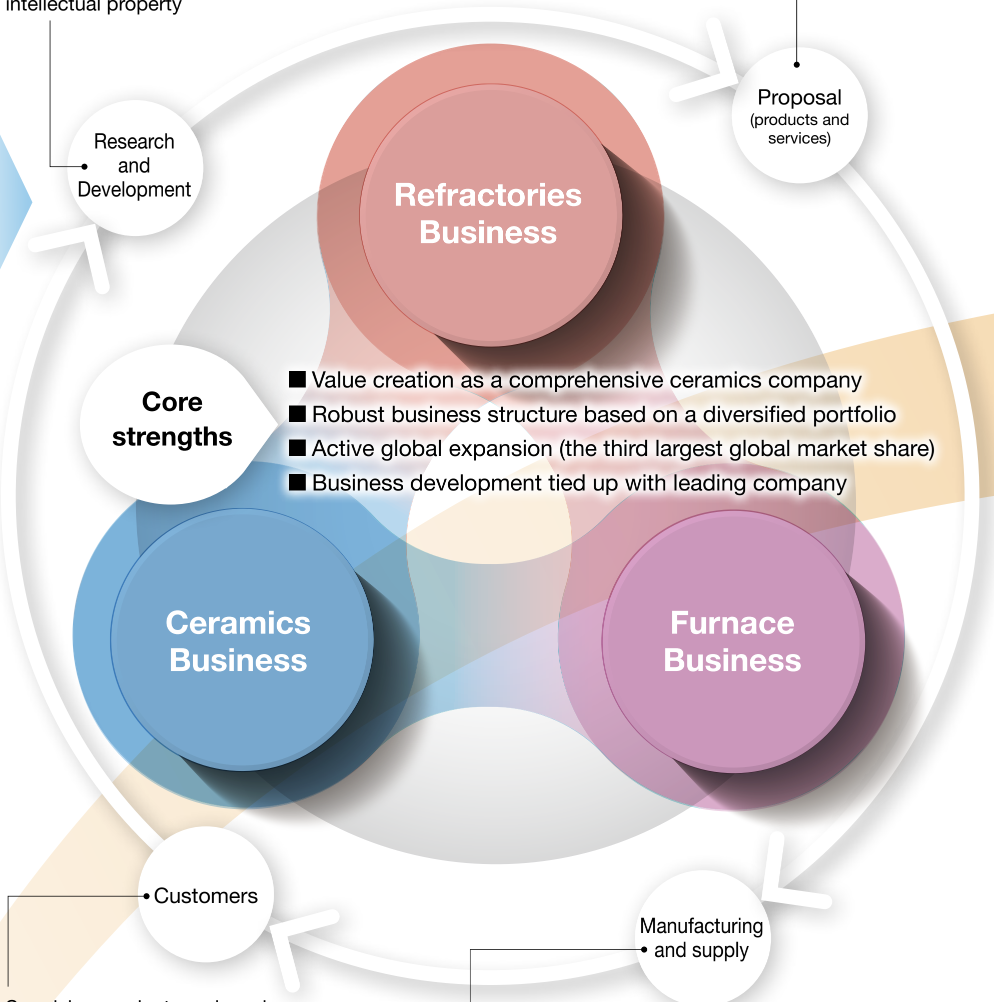
Raw materials of refractories and ceramics
206, 627 tons

Recycling rate of above materials
10.1% (non-consolidated)

Social and relationship capital ▶ pp. 24, 43-44

Coexistence with local communities through business activities

Suppliers Approx. 1,900



- Developing capability of high performance and value-added products
- Technology development leveraging world-leading intellectual property

- Ability to solve problems based on integrated products and construction services
- Supplying ceramics to cover diverse industrial fields
- Value-added products and services combining refractories with related equipment

Core strengths

- Value creation as a comprehensive ceramics company
- Robust business structure based on a diversified portfolio
- Active global expansion (the third largest global market share)
- Business development tied up with leading company

- Supplying products and services to meet advanced needs
- Supplying values as a comprehensive ceramics company

- Manufacturing capabilities and quality assurance based on thorough quality control
- Global supply chain

Market environment

- Increasing demand of high-performance and value-added refractories reflecting the de-carbonization need of steelmaking process
- Continuing expansion of steel demand in India and Southeast Asia
- Expansion of non-ferrous demand in Europe, North Africa, the Middle East, and elsewhere
- Increasing demand of semiconductor manufacturing equipment, electronic components, and fuel cells

Basic policies of the 2025 Revised Management Plan ▶ pp. 15-16

Steady promotion of various initiatives toward corporate growth, including global strategies and active investment in growth fields

Basic strategies

Refractories Business
- Business enhancement in response to the structural change of Japanese and international demand
- Global growth in collaboration with global business partners
- Active investment to strengthen global production capability

Furnace Business
- Expansion of the areas of maintenance work for the steel industry
- Business expansion based on the enhancement of energy saving in the field of industrial furnace

Ceramics Business
- Aggressively advance into the field of new growth industry
- Capture of growing demand through timely capital investment

Company-wide
- Enhancement of company-wide infrastructure, Promotion of digital transformation, Contribution to sustainable society

Outcomes

Economic value ▶ pp. 3-4, 15-16

A world-class comprehensive ceramics company that is a leading value provider to steel and other industries

	FY2022 results	FY2025 targets
Net sales	165.2 billion yen	180.0 billion yen
Ordinary profit	12.1 billion yen	15.0 billion yen
ROS	7.3%	8.3%
ROIC	8.5%	9.0%

Social value ▶ pp. 3-4, 27-30

A company that contributes to the well-being of future generations, and the conservation of the Earth's environment.

SUSTAINABLE DEVELOPMENT GOALS

Supplying value to stakeholders

Customers	Supply of stable quality products and services
Shareholders and investors	Enhancement of corporate value
Business partners	Legal compliance and the promotion of fair and equitable transactions
Employees	Provision of pleasant and growth-promoting working environment
Local communities	Contribution to the development of comfortable communities and cultivation of local human resources for the next generation

Materiality

Environment pp. 33-36
- Accelerating climate change measures through heat management technology
- Conservation of the regional environment
- Promotion of recycling
- Compliance of chemical substances regulations

Society pp. 24-25, 37-44
- Promotion of Diversity & Inclusion
- Coexistence with the local community
- Stable supply to customers
- Thorough protection of human rights
- Human resources development
- Promotion of working environment improvement
- Thorough quality control
- Thorough workplace safety

Governance pp. 45-50
- Thorough implementation of compliance
- Enhancement of corporate governance

Business Domains

We are engaged in **Refractories Business**, **Furnace Business**, and **Ceramics Business**, and are expanding our business globally. Through these diversified portfolios, we have achieved a business structure that is more resilient by the trends of the steel industry.

Manufacturing and sales of refractories

- We manufacture refractories on a global basis including India, China, and Europe as well as Japan

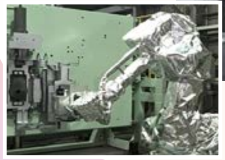
Main refractories product types

- **Furnace Refractories**
  So-called refractories bricks, used mainly as lining in facilities
- **Monolithic Refractories**
  Refractories shipped mainly as powders into which raw materials have been mixed. These refractories make a contribution to CO_2 emission reductions, shorten manufacturing process, and cost-saving, because they do not involve a baking process
- **Flow Control Refractories**
  Refractories used in the continuous casting process, chiefly in control and regulation of flows of molten steel and gas agitation

Engineering: manufacturing and sales of slide gates and molds

- We are responsible for the design and manufacturing of equipment and molds for "making" refractories, as well as for the wide range of engineering tasks such as devices and robots for "using" refractories.
- We integrate control technologies with information technology for refractories and engineering, thereby enhancing the provision of advanced development and automation technology.

Manual exchange



Exchange by REX-ROBO

Refractories Business
Manufacturing and sales of refractories used in various industrial furnaces

KROSAKI

Ceramics Business
Manufacturing and sales of various industrial ceramics and sales of landscape materials

Furnace Business
Design, construction, and maintenance of various furnaces

Fine ceramics

- Manufacturing and sales of parts and materials used in a wide range of industrial applications, including semiconductors, aerospace, and medical

Ceramics materials for electronic components

- Manufacturing and sales of parts and materials for the manufacturing processes of electronic components used in communications devices, home appliances, automobiles, and other applications

Thermal ceramics

- Manufacturing and sales of thermal insulation materials and heaters, and sales of landscape materials
- Our high-performance thermal insulation also applies to home fuel cells (ENE-FARM)

Maintenance

- Maintenance and repair of refractories supporting the operation of steelworks, cement plants, and other facilities

Construction

- Construction of refractories for large-scale facilities (such as blast furnaces and coke ovens) under plant manufacturers

Design

- Design and construction of industrial furnaces (such as reheating furnaces and incinerators) responding to customer needs

Core Strengths

Point 1 Value creation as a comprehensive ceramics company

- We have been developing comprehensive ceramics business by combining Refractories Business, Furnace Business, and Ceramics Business based on the technology and expertise accumulated since its establishment in 1919 for over 100 years.
- Through the synergy created by these three businesses, we provide value creation as a comprehensive ceramics company to customers in various fields.

Point 2 Robust business structure based on a diversified portfolio

- We are building a robust business structure by deploying a multifaceted business portfolio.

Refractories Business We are promoting global business through the development of value-added products and services in collaboration with our group companies and business partners overseas

Furnace Business In addition to refractories, we are expanding our business to include not only design, construction, and maintenance of industrial furnaces, but also the field of environmental furnaces, such as biomass power generation boilers, and promoting integrated activities between refractories products and construction services. Furthermore, we are also actively pursuing overseas expansion.

Ceramics Business We leverage the technology cultivated with refractories and expand our business not only in the field of semiconductor manufacturing equipment, electronic components, and fuel cells, but also in the fields of aerospace and medical.

- We will accelerate business expansion with a global perspective and build a stronger business structure.

Point 3 Active global expansion (the third largest global market share)

- We are expanding our business globally through collaboration with overseas group companies and alliance with overseas partners in India, Europe, China, and the Americas.
- We are expanding our business in regional markets, tailoring our multifaceted strategy to not only the steel industry but also non-ferrous field such as cement, through technological license, sales partnerships, and other collaborations.
- We secured the third largest global market share in the refractories field for steel and we aim to further expand our market presence through these business developments.

The International Metallurgic Trade Fair with Congresses (METEC) in Germany

Point 4 Business development through alliances with leading companies

- We have achieved business expansion by leveraging the relationships we have built with leading companies all over the world in order to develop and improve our refractories, furnace and ceramics businesses.

President's Message

Boldly undertaking challenges with the aim of becoming "a world-class comprehensive ceramics company that is a leading value provider to steel and other industries" and "a company that contributes to realizing a sustainable society, the well-being of future generations, and the conservation of the Earth's environment."

Kazuhiro Egawa
Representative Director, President

By leveraging the strengths of the technologies and expertise we have built up over more than a century since our establishment in 1919 and our active global expansion, we have grown into a big corporate group that supports not only manufacturing industries in Japan but also materials industries around the world. Currently, we conduct business primarily in the three segments of the Refractories, Furnace, and Ceramics. We will continue to undertake new challenges boldly as we leverage our strengths in technological expertise, R&D capabilities, and global business expansion, aiming to become both "a world-class comprehensive ceramics company that is a leading value provider to steel and other industries" and "a company that contributes to realizing a sustainable society, the well-being of future generations, and the conservation of the Earth's environment."

In addition, I would like to explain our response to the business environment, our growth strategy (Business Plan), management principle as President, and our corporate culture, as well as the direction we are aiming for in order to achieve a sustainable society.

Management Policy based on the business environment of each segment in our group

Refractories Business

Refractories business is our main business, accounting for 85% of our group's total sales. We strive to respond to the mature Japanese market and growing overseas markets.

Refractories Business in Japan

The main target of Refractories Business in Japan is the steel industry. Through providing a wide range of refractories that meet the diverse needs of Japanese steel companies, particularly those with advanced specifications, we have received high praise from customers. In the future, as the Japanese population inevitably decreases, it is expected that the Japanese consumption of steel products, which are the foundation of life and industry, will reduce, leading to a decrease in Japanese crude steel production. As a result, the production of refractories for the Japanese steel industry is also expected to decrease in the long term.

Upon looking at the business environment facing headwinds, we believe there are unique growth opportunities for us if we focus on another challenge facing the Japanese steel industry. Specifically, this challenge is the technological innovation towards decarbonization of the steel industry. The structural changes in the steelmaking processes, including the implementation of hydrogen reduction technology and the continuous operation of large-scale electric furnaces with low CO_2 emissions, will bring about an increase in the advanced requirements for refractories products. In other words, the demand for high-performance refractories, in which we have a strong expertise, is expected to expand. With this understanding, we will continue to focus on R&D activities to meet the changing and advanced customer needs.

Overseas Refractories Business

The Overseas Refractories Business is one of the most important challenges for our group's growth strategy. Looking at the world, crude steel production in Southeast Asia and India is increasing. In particular, India, with a population of nearly 1.5 billion, can expect further increases in crude steel production and a corresponding expansion in demand for refractories for the steel industry. In India, our group subsidiary TRL KROSAKI REFRACTORIES LIMITED has established a full product lineup of refractories for steelmaking. Products manufactured by the subsidiary above, which incorporate our technological expertise, are already highly regarded in the Indian steel industry and the subsidiary holds a leading position in the market of the country. We plan to actively make proactive investments to maintain and develop our established position in light of the certain increase in demand for refractories for the steel industry.

In addition, within each region such as Europe, the Americas, and China, where a certain level of crude steel production is being maintained, we are actively fostering enhanced collaboration with partner companies, on top of the ongoing efforts in production and sales undertaken by our group. The proportion of our consolidated net sales from overseas has already reached 45%, and we will continue to enhance our global expansion efforts and expand our Refractories Business in the global markets.

Furnace Business and Ceramics Business

Furnace business designs, constructs, repairs, and maintains various types of kilns, such as reheating furnaces and coke ovens at steelworks, rotary kilns at cement plants, and boilers for biomass power generation. From the perspective of realizing a sustainable society and conserving the global environment, we consider efforts in the field of environmental furnaces, represented by biomass power generation boilers and energy-saving industrial furnaces, to be important. We believe that responding to the demands of carbon neutrality/SDGs and expanding this field not only in Japan but also in Southeast Asia and elsewhere will lead to our business expansion and the realization of a sustainability society.

The Ceramics Business is involved in a wide range of industries with high growth expectations, including the semiconductor manufacturing equipment field, as well as electronic components, fuel cells, and even aerospace and medical fields. We are proud to have already established a strong competitive advantage in specific areas of each field. While leveraging the technology cultivated in the Refractories Business, we will aim for further business growth, focusing on the semiconductor manufacturing equipment field, which can expect steady demand in the future.

We acknowledge that the construction of a diversified portfolio through the expansion of Non-Refractories Businesses will enhance the business structure of our group.

Upward revision of 2025 Management Plan to aim for further growth

(2025 Revised Management Plan)

Our group has formulated and promoted the "2025 Business Plan" for the period from the fiscal year ending March 2022 to the fiscal year ending March 2026, aiming to become "a world-class comprehensive ceramics company that is a leading value provider to steel and other industries." Since the first fiscal year of the implementation period, we have encountered cost increases due to the soaring prices of raw materials and energy worldwide. We have endeavored to promote thorough cost reduction, pass cost increases that are difficult to resolve through independent efforts to selling prices, expand the development and improvement of high-performance products, and promote sales expansion primarily in India and Europe. Consequently, we were able to attain record-high sales and ordinary profit for the fiscal year ending in March 2023, and achieve the original 2025 Management Plan ahead of schedule. On the other hand, we recognize that the market environment surrounding our group companies has changed significantly from the assumptions made at the time of the original plan and the level of uncertainty has increased. We compiled and announced the "2025 revised Management Plan" in July 2023 based on the recognition we need an upward revision of our target in order to continue to grow even in these circumstances. The new financial goals are set at consolidated net sales of 180 billion yen and consolidated ordinary profit of 15 billion yen. Furthermore, the amount of capital investment in facilities for during the fiscal 2021-2025 planning period has been increased by 15 billion yen to 35 billion yen, in order to expedite investments in our global business and growth areas,

leveraging the strengths of the group. We will diligently execute this "2025 Revised Management Plan" and strive for additional growth.

"Two challenges" to be addressed and countermeasures

Among these medium- to long-term initiatives, I am specifically focusing on enhancing investment in labor saving and global human-resource development.

1. Enhancing investment in labor saving

Securing and developing human resources will be crucial to sustained growth. On the other hand, it is important to note that as the Japanese population inevitably decreases, the circumstances surrounding recruitment will become progressively more severe. Based on the above, it is essential to strengthen efforts to improve productivity, especially through the automation of manufacturing processes. We will further accelerate labor-saving investments, which are investments for growth, and promote improvements in productivity, safety, and environmental aspects in the manufacturing site to enhance competitiveness. Furthermore, we are not only focusing on refractories manufacturing processes, but also on labor-saving measures in the steel manufacturing process. For example, the robot developed by us to perform refractories exchange work during the steel manufacturing process has been highly evaluated by our customers as a solution technology that contributes to the safety and labor-saving of exchange work. We will continue to focus on investment in labor-saving and the development of labor-saving solutions from a wide range of perspective.

2. Global human-resource development

The overseas ratio in our consolidated sales has reached 45%, and securing and developing human resources who can play an active role internationally will become increasingly important for our future growth strategy. I believe that my experience in international M&A and the establishment of joint ventures since my early years has contributed to the cultivation of a global business acumen. Through the diligent and proactive accumulation of international experience, it is anticipated that our employees will significantly broaden the scope of their endeavors as global talents. This is one reason why we intend to enhance educational measures through means such as increasing opportunities for language learning and working abroad.

The common values regarding the expansion of labor-saving investment and the development of global human resources is that human resources are exceedingly significant and irreplaceable capital for our company. To continue to be an attractive company, it is imperative for management to make precise decisions and pursue business growth. Additionally, it is crucial to actively visit the manufacturing site, engage in direct conversations with a wider range of employees, and attentively listen to their perspectives in order to establish a strong connection with the management. This is considered a fundamental principle of effective management. This is because I believe that when every employee works with a sense of pride, it contributes to society and helps give back to our diverse stakeholders, including employees themselves. I believe that "enhancing people" is what human capital management is all about.

Our Corporate Culture: Drivers to Achieve a Sustainable Society

• A corporate culture of diversity cultivated throughout our history

Our group has continued to develop through the integration of multiple companies. Our current corporate culture has been shaped by the amalgamation of various corporate values. In recent years, the importance of diversity has been attracting attention, but our group has a history of expanding while embracing diversity and can be considered to epitomize Diversity & Inclusion. I value and appreciate all employees irrespective of individual characteristics such as age, gender, nationality, or employment background. One of my significant missions is to promote talented individuals with ability and motivation. Similarly, it is important to create a culture that enhances employee motivation. I believe that creating an environment where all employees can thrive is the mission of management.

• A corporate culture that each member takes pride in our work environment where technology achievements are made

Our group's Mission Statement includes "our work environment where technology achievements are made" as one of our prides.

In our corporate culture, which incorporates diversity, the commitment to acquiring technology has been nurtured as a common value. The number of patents obtained so far is the highest in the refractories industry in Japan, and a major strength of our company is that the "KROSAKI" brand has penetrated in the market as a technology-oriented company. Furthermore, due to the fact that our parent company is Nippon Steel, we have the unique advantage of being able to verify the performance of refractories developed by our technologies in the mass production facilities of high-grade steel with the cooperation of Nippon Steel. We leverage this advantage in the Furnace Business as well. The Ceramics Business takes pride in establishing a strong advantage in specific areas of various industries, as mentioned earlier, and the foundation of this business is the technological expertise of "our work environment where technology achievements are made." We will maintain and develop this corporate culture while preserving its essence.

• Promoting "sustainability management"

Under the "Sustainability Activity Basic Policy" established in 2021, the Group has established "the Sustainability Promotion Committee," on which I serve as chairperson. I believe that the sustainable development of society and the sustainability of the Company's own business activities are inseparable. For this reason, the Group is promoting initiatives covering all 17 SDGs items not only in Japan but also around the world. Specific examples include social welfare initiatives such as the installation of water purification facilities for drinking and toilets in India, as well as collaboration with the community through the our track and field team in Japan. Through these activities, I consider that these work as a mechanism that has employees feel a sense of pride and relationships with society. It is like the foundation for sustainable development of the Company. We aim to deepen our efforts in all 17 SDGs items through the operation of the "Sustainability Promotion Committee."

• Corporate governance is important in the long term

Corporate governance is extremely important in continuing appropriate investments from a long-term perspective without being caught up only in short-term profits. Our company thoroughly trusts the managers at each site, promotes delegation of authority, and strongly encourages them to fulfill their obligations and responsibilities. In addition, the foundation of a healthy business activity for a manufacturing company is the thoroughness of "safety" and "compliance." We always keep this in mind and continue to work diligently. Thanks to the efforts of our employees and everyone involved, the safety performance in the workplace is excellent. Quality cannot be ensured without safety. And without ensuring quality, it is impossible to continue improving profitability. We will strive to achieve the three pillars of "safety, quality, and profitability."

Furthermore, I recognize that the Board of Directors is fulfilling its function by each director demonstrating diverse skills, including the knowledge of outside directors. In order to further improve effectiveness, we will strive to expand opportunities for study and discussion, such as study sessions, and further enhance the skills and quality of discussions of each individual.

Message to Stakeholders

Our group has set "We are committed to playing an important role in global industrial development, and to contributing to the prosperity of society. To achieve this, we look to provide high-value products and technology in the field of ceramics worldwide through continuous innovation." as our mission. I take pride in being with a company that can contribute to society and believe that providing valuable products to our customers is the most important thing for our group, and I share this belief with our employees.

To our shareholders, we have the intention of returning profits by keeping in mind a dividend payout ratio of around 30% and meeting the expectations by expanding our profits. Furthermore, we are committed to fulfilling our responsibility to stakeholders, including investors, by enhancing IR activities and continuing to achieve steady growth in order to obtain fair evaluation from the capital market.

The Krosaki Harima Group, which captures business opportunities through bold and cautious growth investments, would like to ask for your continued support for its future.

Management Plan

"2025 Management Plan" announced in 2021 was achieved ahead of schedule.

We formulated **"2025 Management Plan"** in 2021, and have implemented it with the aim of becoming "a world-class comprehensive ceramics company that is a leading value provider to steel and other industries."

As a result, our company has achieved the financial targets of the 2025 Management Plan ahead of schedule, in the financial performance of the second year of implementation in FY 2022 (exceeded in net sales and ordinary profit).

	Initial plan (FY2025)	FY2022 results
Consolidated net sales	150.0 billion yen	165.2 billion yen
Consolidated ordinary profit	12.0 billion yen	12.1 billion yen
ROS	8.0%	7.3%

Taking into account the changes in the market environment, the "2025 Management Plan" has been updated with the aim of further growth.

We have revised the 2025 Management Plan (announced on July 28, 2023), in consideration of changes in the economic and social situation surrounding our group, including the achievement initial targets ahead of schedule, soaring global raw material prices, and a decrease in crude steel production by major Japanese and overseas customers as well as with a view to further growth in the future market environment.

Future expectations for the market environment

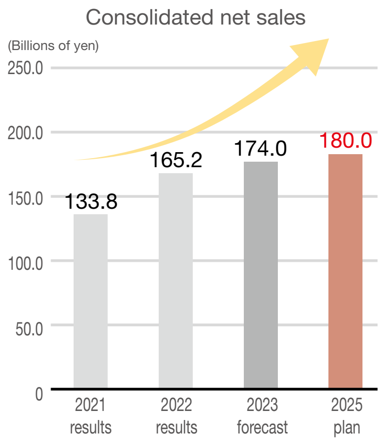
- ◆ Demand expansion for high-performance and value-added refractories reflecting the de-carbonization needs of the steel manufacturing process
- ◆ Continuous growth in steel demand in India and Southeast Asia
- ◆ Demand expansion in non-ferrous field in Europe, North Africa, the Middle East, and elsewhere
- ◆ Demand expansion in the fields of semiconductor manufacturing equipment, electronic components, and fuel cells

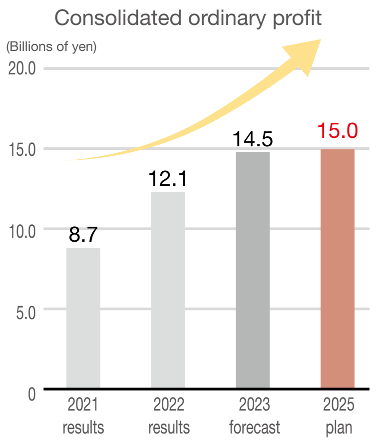
Update of the "2025 Management Plan"

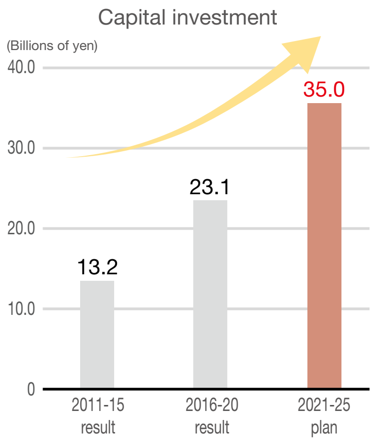
(Continuous promotion of contribution to the further growth and the realization of a sustainable society)

In the "2025 Revised Management Plan," we have set new financial targets and capital investment plans aimed at further profit growth

- The financial targets are set at **ROS: 8.3% or higher**, **ROIC: 9.0% or higher**.
- We aim to achieve **consolidated net sales of 180 billion yen** and **consolidated ordinary profit of 15 billion yen** for the fiscal year ending March 2026.
- The capital investment primarily for overseas business and ceramics business will be **increased from 20 billion yen to 35 billion yen (over the next five years)** to support growth.





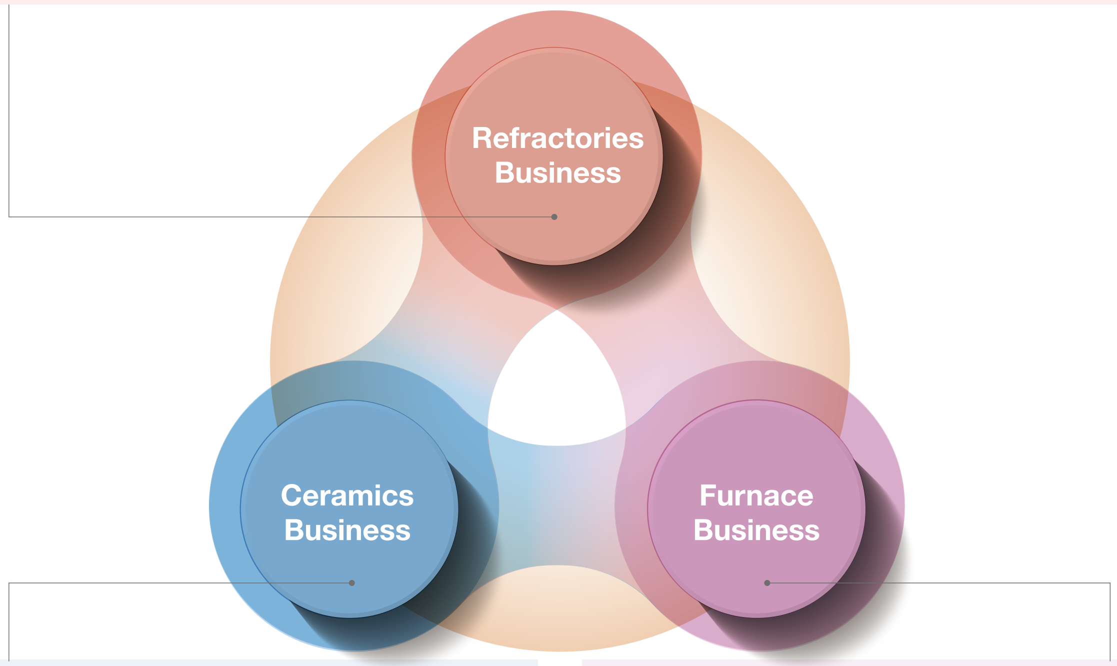


Business strategies to realize the "2025 Revised Management Plan"

We accelerate various initiatives for profit growth, such as **promoting global strategies leveraging the strengths of our group, implementing proactive investment in growth areas**, etc.

Enhancement of profitability and competitiveness in the Refractories Business

- ▶ Establishment of a high-profit structure by expanding sales of value-added products that contribute to maximizing customer value
- ▶ Thorough cost reduction, promoting development based on customer trends toward carbon neutrality, and reinforcing R&D capabilities from a global perspective
- ▶ Business expansion including non-ferrous field through strengthening group cooperation, collaborations with partner companies and deepening partnerships, focusing on primarily overseas growth markets



Profitability enhancement of the Ceramics Business

- ▶ Enhancement of quality and production technology capabilities to respond to mass production orders from growth fields
- ▶ Timely execution of capacity expansion investment and early realization of investment benefits

Profitability improvement of the Furnace Business

- ▶ Steadily securing orders for large-scale construction projects and strengthening the foundations of steelmaking and coking facilities maintenance work
- ▶ Sales expansion through enhanced proposal to customers in Japan and overseas, including in the non-ferrous field, by leveraging the technological capabilities of integrating products and construction services

Strengthening of the entire company's business foundation and contribution to the creation of a sustainable society

- ▶ Stable implementation of various measures based on Sustainability Activity Basic Policy , including carbon neutrality initiatives
- ▶ Deepening of safety, environment, disaster-prevention, and internal controls activities
- ▶ Development and recruitment enhancement of global talent, and promotion of human capital strengthening measures
- ▶ Promotion and acceleration of digital transformation towards a productivity improvement

We aim for further corporate growth through the steady execution of various measures set forth in the 2025 Revised Management Plan, deepening our commitment to the SDGs and continuous efforts toward carbon neutrality.

We strive to achieve the new financial targets and continue to contribute to the realization of a sustainable society.

Global Strategies

Global business strategies, market trends and sales records on a regional basis

The net sales of our overseas businesses increased from 56.1 billion yen in fiscal year 2021 to 74.6 billion yen in fiscal year 2022, accounting for 45% of our consolidated net sales. We continue to aim for further business expansion through strengthening collaboration with overseas group companies and partner companies, as well as implementing new M&A activities.

Based on the needs of target markets, we establish an optimal supply chain through the expansion of domestic product variety, value-added products and solution proposal. We strive to maximize customer value based on win-win relationships with customers.

● Group company
● Alliance partner
* Crude steel production: FY2022 result

Europe

Crude steel production: 175 million tons (9.5% of the world total)

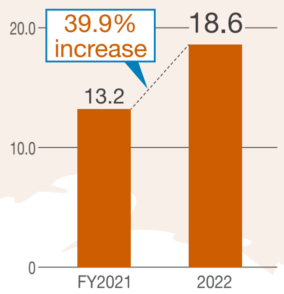
Group companies

- Krosaki Amr Refractarios, S.A. (consolidated subsidiary in Spain)
- Refractaria, S.A. (consolidated subsidiary in Spain)
- Refractaria Technologies, S.L. (subsidiary in Spain)
- Krosakiharima Europe B.V. (consolidated subsidiary in the Netherlands)
- We are expanding our refractories business with steel and cement industries in Europe by enhancing our own production capabilities and procurement from alliance partners within Europe, as well as by delivering value added products from our group companies outside Europe.

Alliance partner

- Through an alliance with ArcelorMittal Refractories (Poland) formed in May 2021, we are enhancing our supply chain that enables us to more efficiently and stably provide our value-added refractories produced at our global manufacturing bases including the said company, to all of our customer steelmakers in Europe.

Net sales in Europe
(billions of yen)



Despite the decrease in domestic crude steel production, we achieved a significant increase in sales by increasing volume through stable supply of value-added products with appropriate pricing.

Americas

Crude steel production: 153 million tons (8.3% of the world total)

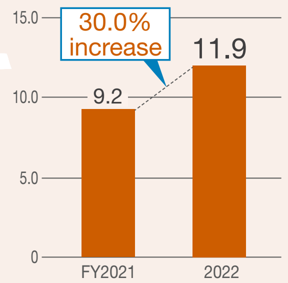
Group company

- Krosaki USA Inc. (consolidated subsidiary in the US)
  Sales expansion of high-performance and value-added products in addition to the supply of flow-control equipment in combination with refractories.

Alliance partner

- Through an alliance with Indústrias Brasileiras de Artigos Refratários - IBAR LTDA in October 2021, we have secured a supply base for products using our technologies in South America, enabling us to capture local demand effectively.

Net sales in the Americas
(billions of yen)



Despite the decrease in domestic crude steel production, we achieved an increase in sales surpassing the previous year by appropriate pricing and developing new demand.

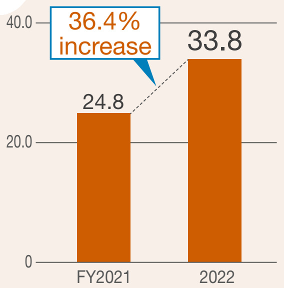
India

Crude steel production: 127 million tons (6.9% of the world total)

Group company

- TRL KROSAKI REFRACTORIES LIMITED (consolidated subsidiary in India)
- The secure capture of increased refractories demand associated with the expansion of crude steel production. The promotion of proactive capital investment and expansion of local production varieties in response to increasing demand.

Net sales in India
(billions of yen)



We achieved a significant increase in sales through the steady capture of refractories demand associated with the increase in crude steel production, as well as the receipt of construction project contracts and the appropriate pricing in response to cost increase.

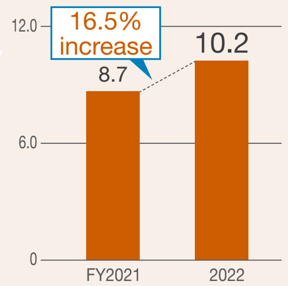
Asia (not including India)

Crude steel production: 1,234 million tons (67.2% of the world total)

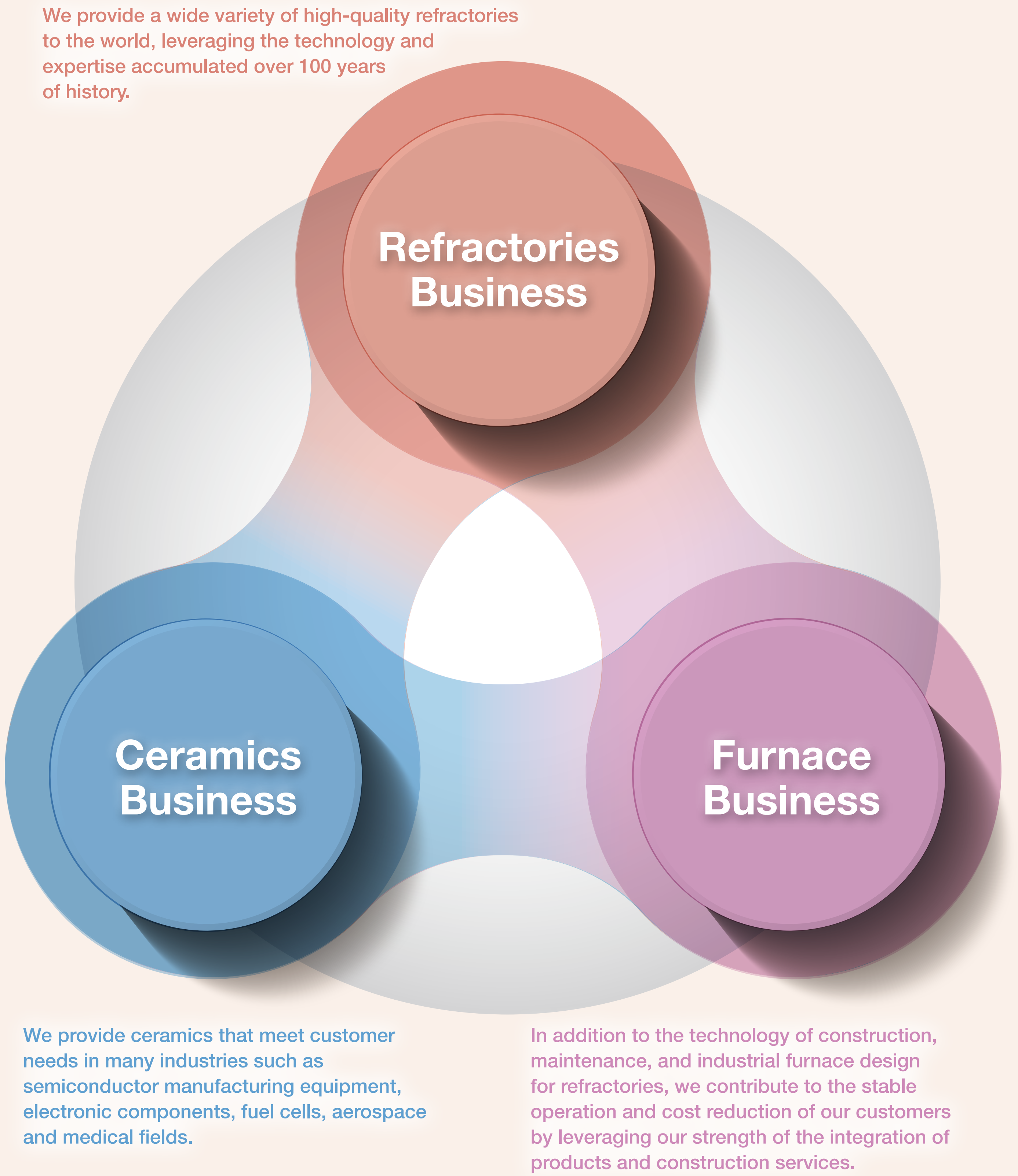
Group companies

- Krosaki Harima (Shanghai) Enterprise Management Co., Ltd. (consolidated subsidiary in China)
- Wuxi Krosaki Sujia Refractories Co., Ltd. (consolidated subsidiary in China)
- TRL KROSAKI CHINA LIMITED (consolidated subsidiary in China)
- YINGKOU KROSAKIHARIMA REFRACTORIES CO., LTD. (equity-method affiliate in China)
- Wuxi Krosaki Machinery Co. Ltd. (subsidiary in China)
- Despite the decrease in crude steel production in Taiwan and Southeast Asia, we achieved an increase in sales surpassing the previous year by enhancing our solution proposals.

Net sales in Asia
(billions of yen)



Business Strategy and Synergy as a Comprehensive Ceramics Company



Value creation as a comprehensive ceramics company

Our company started its business in 1919 with the aim of manufacturing and selling refractories, and has a history of over 100 years.

We have been committed to the motto of "better, faster, less expensive" as a manufacturing company since its founding, and have been dedicated to contributing to the stable operation of customers, such as the steel industry, and developing value-added products through the provision of refractories materials. In addition, we have dedicated ourselves to the Furnace Business closely associated with the Refractories Business, and since 1985, to the Ceramics Business. Currently, we are expanding our business globally, with the Refractories Business, Furnace Business, and Ceramics Business as the three main segments.

We believe that not only providing refractories as a material, but also the "integrated product and construction service," including construction, maintenance, and design functions in the Furnace Business area, can lead to stable operations of our customers by expanding expertise in the refractories field. At the same time, this can make us possible to quickly respond to customer needs and propose measures for improvements.

In the Ceramics Business, products are required to possess qualities such as wear resistance, heat resistance, and low thermal expansion. We are utilizing the expertise developed in the refractories industry to meet the market requirements.

As mentioned above, we have created synergies among our three businesses with the Refractories Business as the core, and we provide the value to our customers as a comprehensive ceramics company.

Building a robust business structure based on a diversified portfolio

Based on the characteristics and strengths of each business, we are strengthening our efforts for further business expansion.

For the Refractories Business, in addition to strengthening the promotion of high-performance and value-added products, enhancing group collaboration in overseas growth markets and mature markets, and strengthening global expansion through partnership and cooperation with partner companies, we continue to strengthen our R&D capabilities from a global perspective to meet the new needs of our customers such as the transformation of the steelmaking process and to respond to carbon neutrality.

For the Furnace Business, in addition to strengthening the business foundation through steady order acquisition of various projects and streamlining existing maintenance work In terms of personnel, we aim to expand the order intake of environmental facilities such as biomass power generation that contribute to climate change issues and refractories construction of energy-saving industrial furnaces, and we promote overseas expansion, including non-ferrous materials, with our integrated technical expertise in products and construction services.

For the Ceramics Business, we actively execute timely capital investments for further business expansion in fields such as semiconductor manufacturing equipment, electronic components, and fuel cells, which are expected to expand in the future, and we boldly develop new growth fields such as aerospace and medical fields.

In each of these segments, we strive to expand our business with a strong business structure of a diversified portfolio, taking into account not only Japan but also active global expansion.

Refractories Business

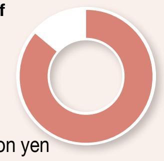
Refractories are materials that can withstand very high temperature in the process of manufacturing metals including iron, glass, and cement. In other words, refractories are “materials for the materials” that support the manufacturing industry and, consequently, the foundation of everything in our daily lives.

We have been manufacturing refractories for over 100 years and have provided high-quality products around the world based on the technology and expertise accumulated over many years.

Refractories Business

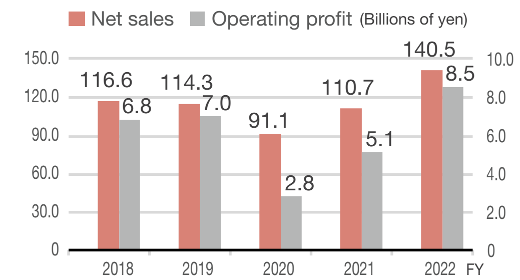
Composition of consolidated net sales
85%

Net sales
140.5 billion yen



FY2022 Results and Trends

The net sales of the Refractories Business was 140.5 billion yen, and the operating profit was 8.5 billion yen, achieving record highs in both consolidated sales and profits, as a result of the efforts to pass on increased costs to sales prices both in Japan and overseas expanding business in the robust Indian steel market, and expanding sales to the non-ferrous field.



Recognition of the business environment

In Japan, while the restructuring of steelworks is progressing and crude steel production is anticipated to remain below 90 million tons per year, it is expected that the demand for high-performance and value-added refractories will increase due to the change in the manufacturing process towards carbon neutrality in the steel industry.

Overseas, we expect continuous expansion of steel demand and further expansion of refractories demand in growing market, driven by population growth and economic development such as in India and Southeast Asia.

Based on these business environments, we strive to strengthen global expansion and prioritize the development and practical application of cutting-edge technologies and innovative products to enhance the competitiveness of the Refractories Business both in Japan and overseas.

Future Initiatives and strategies

- The improvement of manufacturing capability and productivity, efficiency improvement of indirect departments, thorough promotion of rationalization and the selection and concentration of personnel allocation
- Establishment of a high-profit structure through expanded sales of value-added refractories and auxiliary equipment and robots utilizing engineering technology
- The promotion of the development of refractories based on customer trends, such as the conversion to hydrogen reduction blast furnaces and electric furnaces, and the demand for refractories that do not require preheating or drying.
- Strengthening group collaboration in overseas growth markets and matured markets, and acquiring more orders through partnership and cooperation with partner companies
- Reinforcing R&D capabilities from a global perspective

Source of strengthening profitability

- A comprehensive refractories supply system that meets the diverse needs of all customers
- Thorough manufacturing quality control and quality assurance system
- World-class development capabilities of high-performance and value-added products, as indicated by the number of patents held
- Rich experiences of overseas business and global production sights

Examples of refractories products

• Flow control refractories

• Furnace bricks

• Monolithic refractories

Furnace Business

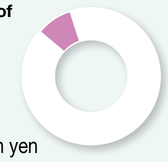
The Furnace Business, which is responsible for the construction, repair, and maintenance of refractories for steelworks, cement plants, etc., as well as the design and construction of incinerators and biomass power generation boilers, plays a vital role in maximizing the performance of refractories and ensuring stable operation of our customers.

In addition to the refractories construction and industrial furnace design technology that we have cultivated, we aim to further expand our operations by leveraging our expertise in products and construction services integration.

Furnace Business

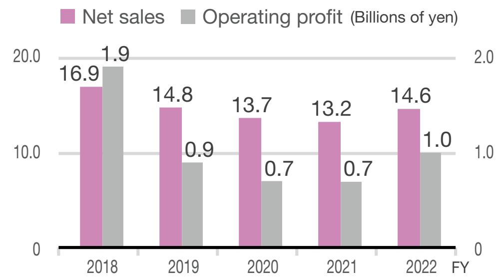
Composition of consolidated net sales
9%

Net sales
14.6 billion yen



FY2022 Results and Trends

The decrease in crude steel production resulted in a decline in orders for steel manufacturing facilities. However, the furnace business achieved a significant increase in net sales of 14.6 billion yen (10.6% increase compared to the previous year) and operating profit of 1 billion yen (42.8% increase compared to the previous year) due to the acquisition of large-scale construction projects, including biomass power generation boiler projects, and cost reductions such as improved personnel efficiency in steel manufacturing facility maintenance work.



Recognition of the business environment

As is the case with the Refractories Business, the furnace business also experienced a decline due to fluctuations in crude steel production primarily caused by maintenance work. However, there is an upward trend in the repair works for large industrial furnaces in the steel industry. In the field of environment and energy, there is a growing anticipation for biomass power generation as a renewable energy source, and there is also a significant demand for new installations.

We will continue to promote cost reduction through improving personnel efficiency and collaborate with group companies in Japan and overseas to acquire the order of products and construction services integration of environmental-related facilities that contribute to climate change issues.

Future initiatives and strategies

- Order acquisition of large-scale construction projects, strengthening the foundation of steelmaking and coke oven maintenance work
- Sales expansion by strengthening the proposal capabilities to customers in Japan and overseas, including non-ferrous materials, utilizing our expertise in products and construction services integration
- Expansion of order intake for refractories construction of environmental facilities and energy-saving industrial furnaces such as biomass generation that contribute to climate change mitigation
- Appropriate response to the structural change of steel manufacturing
- Pursuit of work efficiency through the use of digital technology.

Source of Enhanced Profitability

- Enhancement of the education system and multi-skilling of personnel, which are the foundation of the business
- Our expertise in proposing integrated products and construction services capabilities as a construction business in the refractories industry
- Accumulation of the technologies in refractories maintenance, construction, and design that we have cultivated

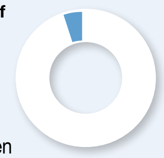
Example of construction results

Ceramics Business

Ceramics is one of the three major elements of materials, along with metals and plastics. Refractories are also classified as ceramics, but the main difference between products handled in the ceramics business and refractories is that the former has fine and homogeneous particles (structure). We target three fields: "fine ceramics," "thermal ceramics," and "ceramics materials for electronic components," and develops leading products in each field.

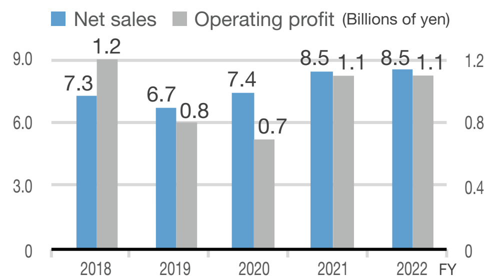
Ceramics Business

Composition of consolidated net sales
5%
Net sales
8.5 billion yen



FY2022 Results and Trends

Net sales were 8.5 billion yen, operating profits were 1.1 billion yen, as we were able to achieve cost reductions such as an appropriate pricing responding to the cost increase of raw materials and improving the yield, despite the challenging business environment due to a decrease in orders for ceramics materials for electronic components accompanying inventory adjustments by customers.



Recognition of the business environment

The total world sales of semiconductor manufacturing equipment related to our main field of our fine ceramics business reached a record high in the fiscal year 2022. The outlook is for negative growth for the first time in four years in 2023, but market expansion is expected in the medium to long term. In addition, ceramics materials for electronic components, which were sluggish in the previous period, are showing signs of recovery.

With the expansion of orders for semiconductor manufacturing equipment and electronic components, we strive to expand our business foundation by responding to a wide range of needs, such as thermal insulations for fuel cells, which are expected to grow in the future, and products for new fields such as aerospace and medical.

Future Initiatives and Strategies

- Timely execution of investment for further business expansion in fields such as semiconductor manufacturing equipment, electronic components, and fuel cells, where future demand expansion is expected
- Active expansion into new growth fields such as aerospace and medical, etc., including structural components for satellites, optical components for the Earth observation and optical data communication satellites
- Establishment of optimal structure for production and research and development in anticipation of further business expansion in the future
- Thorough yield improvement and productivity enhancement in the manufacturing process

Source of strengthening profitability

- Providing the optimal ceramic products tailored to customer needs, including custom-made
- High technological capabilities established in specific fields such as semiconductor manufacturing equipment
- Implementation of new product development and proactive investment for the next generation

• Ceramics for precision components [Fine ceramics]
Semiconductor manufacturing equipment, measurement devices, and optical devices fields

Fine ceramics for precision machinery and semiconductor manufacturing equipment, leveraging the strengths of large-scale shaping, precision processing, and assembly technologies.

Using in application on calibration standards for primary devices and precision measuring devices, taking advantage of the excellent dimensional stability and environmental robustness of zero expansion ceramics NEXCERA®.

• High-performance thermal insulations [Thermal ceramics]
Steel and non-ferrous materials, various industrial furnaces, aviation, automotive fields

The thermal insulation performance exhibits excellent thermal insulation characteristics that are superior to still air and significantly superior to existing thermal insulations, contributing to productivity improvement through energy saving, thinning, downsizing, and weight reduction.

• Ceramics materials for electronic components
Electronic component manufacturing field

This is an essential component in the firing process of ceramic electronic component and we have obtained the number one market share in the global ceramic capacitor field.

The Krosaki Harima Group actively promotes initiatives to address social issues such as environmental problems, and regards the pursuit of harmony with people and nature as a new value, and promotes the construction of a trusted supply chain. In procurement activities, we select raw materials and services from a multifaceted perspective such as the appropriateness of prices, long-term supply stability, transparency, and environmental and human rights protection under strict quality control, with the aim of achieving sustainable procurement to secure stable supply of our products to customers.

In addition to our own initiatives, we establish partnerships with business partners in our supply chain in order to improve added value throughout the entire supply chain based on trust and cooperation, and we strive to provide sustainable value.

Basic Purchasing Policy

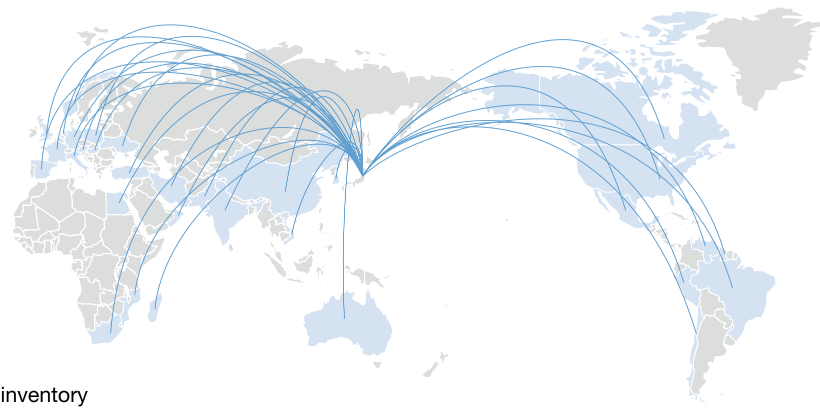
1. Compliance with laws and regulations
   We conduct purchasing activities in compliance with laws, ethics, and company regulations.
2. Fair and equitable purchasing
   We conduct fair and equitable purchasing activities within open trading opportunities.
   We comprehensively judge the selection of business partners based on fairness, reasonableness, and rationality, including quality, technology, delivery, price, and CSR initiatives.
3. Strict quality control
   We conduct strict quality control and engage in purchasing activities that contribute to the improvement of our customers' technology.
4. Building partnerships
   We strengthen the cooperative relationship with business partners and utilize it to improve our products and services.
5. Consideration for the environment, human rights, and safety
   We engage in purchasing activities that fully consider the Earth's environment, local coexistence, human rights, and working environment.

Risk diversification in purchasing activities

We have purchased the raw materials necessary for the production of refractories and ceramic products from various countries around the world.

We continue to establish a stable procurement system based on the following measures.

Countries from where we purchase materials



- Diversification of procurement sources
- Regular risk assessment and appropriate inventory management based on the risk
- Geographical diversification through the exploration and development of alternatives
- Strengthening of relationship with the partner companies based on long-term contracts
- Promotion of using recycled raw materials

Declaration of Partnership Building

パートナーシップ構築宣言

We have announced our "Partnership Building Declaration" that aims the goal of enhancing added value throughout the supply chain through the establishment of a new collaboration beyond the scale and affiliation and coexistence relationship with our business partners.

In the face of the rise in raw material and energy costs due to the COVID-19 pandemic and wars in several places, we engage in appropriate price negotiations and strive to maintain and improve trust through the integrity of transactions and mutual understanding. We are also working on digitalization, such as the introduction of EDI transactions, to improve business efficiency, ensure transparency, and reduce resource consumption through paperless processes with our trading partners. In the complex business environment, we aim to achieve mutual development and value creation through collaboration with partner companies to solve challenges throughout the entire supply chain.

Quality Policy

1. As a company that supports steel and other industries, we place top priority on safety as we strive to “Provide No. 1 value to customers worldwide.” To that goal, each and every member of the KROSAKI HARIMA Group strives for thorough implementation of compliance, and providing the highest quality and reliability to customers, with the aim to make us the best partner to our customers, trusted by them and to grow together with them.
2. We work to advance and standardize individual and organizational work through business operations based on our quality management system, and create new added value.
3. In accordance with the policy above, we will set quality targets for our own departments, ensure we implement the PDCA cycle to achieve these targets, and promote continuous improvement activities and reforms.

Quality Control System

In accordance with JIS Q 9001 / ISO9001: 2015, we have established, implemented, and maintained a quality management system which enables us to improve customer satisfaction (customer value) through continuous system improvement and efficient operation to make us to develop, manufacture, and sell refractories and ceramics, and provide furnace business services that meet customer requirements.

Based on Customers feedback

Once a year, we conduct a survey that asks customers about the extent of their satisfaction with the performance, ancillary services, and development of our products. We analyze the results, share customer needs and issues with the Sales, Development, and Production departments, and work together toward continuous improvement. We also discuss new development themes based on customer needs, work to develop unique and differentiated products, and strive to continuously propose solutions that help to improve customer operations and quality.

On-site Improvement Activities: KMS Activities

We conduct site-based small-group kaizen activities in the form of KMS (Krosaki Monozukuri System) activities to enhance our manufacturing capabilities as we pursue safety, quality, and efficiency. In this activities, participants actively engage in education and mutual exchange at plants, and lead to personnel development which raises the level of what is considered normal and expected for each individual. Moreover, as a place for directly sharing both top-down and bottom-up approaches, managers conduct regular diagnostic activities, and the president and other executives also join in, making them company-wide activities.

Quality Assurance Promotion

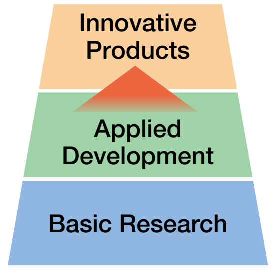
In 2022, recognizing that quality is our most important matter, we established the Quality Assurance Division as a superior organization to the Quality Assurance Department. We plan and lead company-wide activities that strive to provide products that are safer and more reliable. The Company-wide Quality Assurance Committee meets regularly to review the outcomes of action plans, evaluate the effectiveness of systems, formulate policies and plans for the next fiscal year, and implement company-wide improvement activities towards improving quality assurance.

As part of our activities related to “Initiatives for risks and opportunities,” we carry out quality patrols and conduct regular internal audits that maintain objectivity and fairness. We also share risk information with suppliers in Japan and overseas, and promote support activities, to reduce quality risks.

Research and Development (R&D) for the Future

The demands placed on our products are constantly changing as the world rapidly changes and customers’ industries struggle to keep up. We see change as an opportunity, and conduct a wide array of R&D, from basic research that can be used in a variety of ways to applied development that can be used immediately, so that we can utilize needed new technologies in a timely manner.

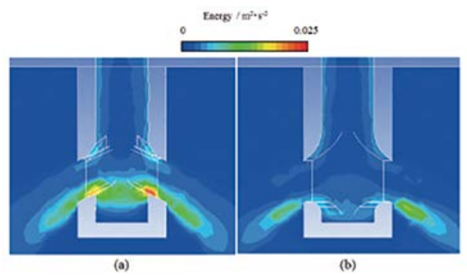
Innovative new products are based on continuous basic research and agile applied development. With our unrivaled R&D capabilities, we will continue to contribute to our customers and society. You can see some of the results of our research and development on our website.*1



[Examples]

In steelmaking, continuous casting (the process of cooling and hardening molten steel) has a significant impact on the quality of the final product. The shape of the immersion nozzle that pours molten steel into the mold is very important because the flow of molten steel within the mold affects the quality of the steel. We developed a nozzle (CFP: Clean Flow Port) with a shape designed based on an original theory we developed, through numerical analysis and model experiments to confirm in advance that it would produce optimum flow.

Example of numerical analysis of the turbulent energy of the molten steel in the vicinity of the discharge hole on the immersion nozzle*2.



The unique shape (b) has less turbulent energy and is favorable than the regular shape (a).

*1 https://www.krosaki.co.jp/development
*2 Reference: Taikabutsu, 69 [2] 58-66 (2017, Mizobe et al.)

◆ Stabilize steelmaking process through high durability

In converters, which refine hot metal into molten steel, oxygen is blown resulting in violent reactions that raises the temperature to more than 1,600°C. We developed CARDIX, which is a dense and corrosion-resistant brick of MgO-C, as lining refractories in converters under such extremely harsh conditions. It resists deterioration even under high temperatures, can withstand long periods of harsh operation, and reduces the risk of cracks due to temperature fluctuations. The material is now used by many customers.

◆ Initiatives to Transform the Steelmaking Process

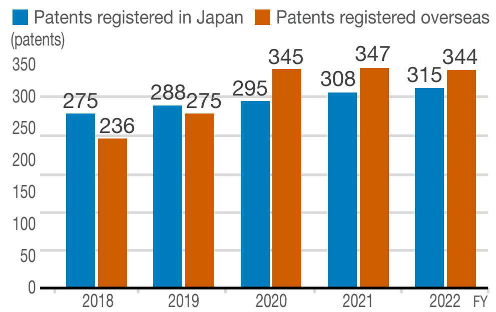
The steel industry is focusing on the use of hydrogen to achieve carbon neutrality. Hydrogen has a high ability to take away oxygen, so there are concerns that this will have an adverse effect on refractories. Therefore, we are carrying out basic research into the effects of hydrogen on refractories. We will continue to contribute to the innovation of the steelmaking processes and achieving carbon neutrality through refractories technology.

Intellectual Property

We promote our company’s activities related to intellectual property initiatives in conjunction with our management and business strategies, and R&D strategies. And we work towards the strategic formation and appropriate protection of intellectual property rights, as well as their effective application in our business activities.

We actively apply for patents based on the results of our research and development, and as our business has expanded overseas, we have filed numerous patent applications not only in Japan but overseas as well. We now hold many patents as a result. The CFP and CARDIX materials mentioned earlier have also been patented in Japan and overseas, and are utilized in our business activities.

Number of Patents Held in Japan and Overseas



Sustainability

Message on Promoting ESG Management

Our "five issues to prioritize" and towards further deepening

The Krosaki Harima Group is striving towards realizing a sustainable society and promoting "sustainability management." In this section, two Directors and Managing Corporate Officers who lead "sustainability management" discuss our group challenges and efforts to address them.

The status of "sustainability management"

Yoshida: The KROSAKI HARIMA Group established its "Mission Statement" in May 2003, which outlined its management philosophy. Our "Mission Statement" is composed of "Mission," "Business Goal," "Our Pride" and "Management Policy," and as the "Mission," we are committed to playing an important role in global industrial development, and to contributing to the prosperity of society. To achieve this, we look to provide high-value products and technology in the field of ceramics worldwide, and as a "Management Policy," we declare our attitude towards various stakeholders such as customers, shareholders, business partners, employees, local communities, and the Earth's environment. We have clearly positioned our contribution to the sustainability of society as the core of our group management and business, since 20 years ago. Furthermore, the "Mission Statement" can be regarded as a reflection of our consciousness of sustainability, which was discussed and established during the process of integrating our predecessor companies that began in 2000, in order to inherit and amalgamate the corporate cultures of each company.

Fukuda: The 17 goals of SDGs items were adopted at the 2015 United Nations Summit, and the importance of sustainability issues as a global theme has been increasing.

Yoshida: Our group also addressed this issue as an important management challenge and had discussions. As a result, we formulated the "Sustainability Activity Basic Policy" in December 2021. The "Sustainability Promotion Committee" chaired by the president and its subcommittee are established based on this policy, and these committees regularly discuss the status and issues of "sustainability management" and report the findings to the Board of Directors.

Sustainability Promotion Committee organization chart

Board of Directors

Report ↑ ↓ Supervision

Sustainability Promotion Committee

Climate Change Sub-Committee	Environmental Sub-Committee	Other issues
• Carbon Neutrality • TCFD Task Force on Climate-related Financial Disclosures	Conservation of the regional environment surrounding the Company (Water environment, greenery environment, air environment)	Promotion of cooperation between responsible department and related departments • Promotion of Diversity & Inclusion • Coexistence with the local community • Promotion of recycling

Our "five issues to prioritize"

Yoshida: In the "Sustainability Activity Basic Policy," we have identified 14 important issues (materiality) that we should address, and have designated 5 of them as the more important issues to prioritize. 14 items of materiality are narrowed down through both our internal analysis and analysis of requests from stakeholders. Furthermore, we have considered these 14 items from both the perspectives of "importance for stakeholders" and "importance for our business" and identified our "five issues to prioritize." 14 items are currently being worked on with "current initiatives," "future initiatives," and "quantitative and qualitative targets (KPIs)" for each item, with the aim of achieving concrete solutions.

The process of considering the identification of materiality (sustainability issues)

Internal analysis on sustainability	Analysis of requests from stakeholders
⊙ Our self-analysis • Through the working group, we identified a total of 54 challenges related to sustainability. → A working group extracted a total of 54 items	⊙ Benchmark survey • Investigation of sustainability issues in competitor companies • Confirmation of requests from customers to suppliers ⊙ Survey by external institutions • Survey on the sector-specific key issues identified by SASB (ESG disclosure framework) and S&P (major credit rating agency)

1. Setting of materiality	⊙ Setting 14 materiality (important issues) in sustainability
2. Materiality map creation (identification of priority issues).	⊙ We have considered these 14 items from both the perspectives of "importance for stakeholders" and "importance for our business" ⊙ We identified five "issues to prioritize" from importance
3. Establishment of initiatives on priority issues for sustainability	⊙ The priority issues of sustainability are worked on with "current initiatives," "future initiatives," and "quantitative and qualitative targets (KPIs).

Prioritization of Issues

KROSAKI × ESG

Priority issues to address

- Accelerating climate change measures through "heat management technologies"
- Promotion of Diversity & Inclusion
- Conservation of the regional environment (water environment, greenery environment, air pollution)
- Coexistence with the local community
- Promotion of recycling

- Compliance with chemical substances regulations
- Thorough implementation of compliance
- Enhancement of corporate governance
- Stable supply to customers
- Thorough protection of human rights
- Human resources development
- Promotion of working environment improvement
- Thorough workplace safety
- Thorough quality control

Fundamental issues

Individual issues in business operations

Fukuda: Three of the five priorities are related to environmental issues. Those are specifically "accelerating climate change measures," "conservation of the regional environment (water environment, greenery environment, air pollution)," and "promotion of recycling." We are advancing individual initiatives from both the perspectives of "reducing environmental impact by our group itself" and "expanding business opportunities for our customers."

As for "accelerating climate change measures" we are reducing our environmental impact by enhancing energy saving in our manufacturing process with high CO_2 emissions such as kilns and replacing heavy oil with natural gas. Furthermore, we are promoting product development to reduce greenhouse gas emissions by customers and society for us to create business opportunities. This includes the use of monolithic products that do not require a drying process, and ultra-low thermal conductivity insulation used for fuel cells.

Yoshida: To realize a carbon-neutral society, it means not only reducing CO_2 emissions within our group, but also contributing to the reduction of CO_2 emissions by our customers and society.

Fukuda: "That's right." In addition, we are working on initiatives such as "conservation of the regional environment" and "promotion of recycling" to contribute to the realization of a circular society and the preservation of biodiversity. We are promoting energy-saving measures such as the LED conversion of all lighting, promoting recycled raw materials, reducing industrial waste emissions through yield improvement, promoting water resource reuse through the renewal of drainage facilities, and thoroughly managing air pollution emissions at a stricter level than the statutory standards. As a result, we have attained the highest rank for energy consumption rate (S-rank) as in the Act on the Rational Use of Energy.

Yoshida: Remaining two priorities are the "promotion of Diversity & Inclusion" and "coexistence with the community." In promoting the 2025 Revised Management Plan, securing and developing human resources is one of the most important challenges. In "the promotion of Diversity & Inclusion," we are dedicated to enhancing work style reforms, such as facilitating the active participation of female, enhancing the rate of male parental leave and annual paid leave, promoting health initiatives, and ensuring the prevention of harassment. In terms of human resource development measures, we are working on promoting staff exchange between Japan and overseas group companies to foster personnel who can play an active role globally, in addition to enhancing hierarchical off-the –job-training programs.

For "coexistence with the community," we are conducting activities to contribute to the realization of a community-based circular society by expanding the use of recycled bricks as landscape materials. In terms of collaboration with the local community, we are working on various activities such as holding running classes by our track and field club, acquiring naming rights for the Kitakyushu Municipal Honjo Athletics Stadium to support facility management, and participating in and sponsoring various local events.

Details of initiatives for priority issues

Accelerating climate change measures through heat management technology

		Past initiatives	Current & Future initiatives	Quantitative and qualitative targets (KPIs)
1) Our own initiatives to achieve carbon neutrality		• Launching the carbon neutral implementation study project • Setting reduction targets for CO_2 emissions and considering measures	• Promoting the spread of non-fired bricks • Product-specific emissions disclosure to customers	<Scope 1 and 2 (non-consolidated)> • 2013: 169,000 tons • 2030: 85,000 tons (50% decrease compared to 2013) • 2050: Substantially carbon neutrality
2) Contribution to customers' efforts to reduce CO_2 emissions		Implementation of the following initiatives in each business segment	• Understanding of the whole supply chain's GHG emissions and goal setting • Contribution to reducing CO_2 emissions in the manufacturing process of customers using our products	
	Refractories	• Development of high-durability and high-performance refractories	• Development of low thermal conductivity refractories and non-preheating refractories, etc.	(Consideration based on future analysis)
	Furnace	• Design of energy-saving industrial furnaces, construction of low thermal conductivity refractories, and acquisition of orders in the environmental fields such as biomass power generation	• Design of energy-saving industrial furnaces, construction of low thermal conductivity refractories, and expansion of orders received in the environmental field such as biomass power generation	
	Ceramics	• Providing ceramics with thermal insulation properties to energy-saving environments, electronics, aerospace and medical industries	• Expanded application of insulation materials to fuel cells, power generation, steelmaking, and industrial furnaces, as well as fine ceramics • Contribution to CO_2 emission reductions in the manufacturing process and in semiconductor equipment of customers through the development and adoption of lightweight setters for high-speed firing furnaces for capacitors	• Application to the latest semiconductor manufacturing equipment (2023) • Application to the mass production stage of energy-saving semiconductor manufacturing equipment (timing undecided)
3) Responding to the new manufacturing process of steel		• Reducing usage (increasing durability, using recycled materials)	• Realization of high-performance insulations and high-performance fine ceramics supporting the COURSE50 process, as well as the evaluation and development of refractories technologies · Application to the practical use of Course 50 process (2025-30) · Application in the spread period (up to 2050)	–
4) Promotion of investment for reducing CO_2 emissions		• Introducing CO_2 emission reductions incentive evaluation into economic evaluation of capital investment	• Continuous evaluation of implementation of CO_2 emission reduction incentives	–

Promotion of Diversity & Inclusion (D&I)

	Past initiatives	Current & Future initiatives	Quantitative and qualitative targets (KPIs)
Initiatives for D&I	• Promoting the employment of people with disabilities, people from different countries, and females • The Company policy on D&I has been formulated. • Appointed a female Director (June 2022)	• Promoting D&I as a global company where employees from various countries play an active role	• Targets for the following items will be set and disclosed separately · Ratio of female workers hired for career-track positions · Ratio of female managers · Total actual annual working hours · Number of days of annual paid leave taken · Indicators related to employee health management

Conservation of the regional environment (water environment, greenery environment, air pollution)

	Past initiatives	Current & Future initiatives	Quantitative and qualitative targets (KPIs)
1) Reduction of the impact on organisms by industrial waste emissions	• Implementation of emissions in accordance with waste standards	• Continuous reduction of waste through recycling promotion and yield improvement	–
2) Strictly control of wastewater treatment in production processes	• Factory wastewater is purified through water treatment facilities, reused in the manufacturing process to result in water saving and environmentally friendly wastewater	• Expanding use of reused water and continuing water saving	–
3) Preventing the outflow of hazardous substances	• Management strengthening, monitoring, and emergency drills in case of leakage	• Promoting the transition to human-friendly chemicals.	–
4) Prevention of soot generation exceeding the regulatory value due to abnormal combustion.	• The monitoring is conducted with self-imposed criteria that are stricter than the public regulations	• Continuous monitoring based on the self-imposed criteria • Promoting detoxification by fuel change	–

Coexistence with the local community

	Past initiatives	Current & Future initiatives	Quantitative and qualitative targets (KPIs)
1) Contribution to the development of livable cities	• Supply of recycled landscape bricks to station squares and parks that color the town. • Achieved a recycling rate of 60%	• Development and supply of recycled landscape products to support the creation of livable towns • Contribution to creating a livable town for everyone through the active participation in various fields such as regional environment and revitalization.	–
2) Development of next-generation human resources responsible for the local activity.	• Participation in local events including cleaning activities, and collaboration with the community through the activities of the track and field club. • Promotion of local hiring	• Contribution to the development of next-generation human resources responsible for the future of the local community • We share the value that our company provides to the local community and pass it on to the next generation. • We contribute to the development of human resources with a sound mind through promoting sports.	–

Promotion of recycling

	Past initiatives	Current & Future initiatives	Quantitative and qualitative targets (KPIs)
Promotion of recycled raw materials and utilization of product recycling technology in various refractories	• Expansion of refractories recycling as recycled raw materials	• Promotion of recycled materials on top of the current joint efforts with customers. • Enhancing of information gathering activities on possible procurement from third party sources including overseas, and of proposal of our use of such materials to customers. • Instructions for increasing recycled raw materials are necessary, as recycled materials are not included in the recipe of materials.	–
	• Furnace Business: Reduction of industrial waste through subcontracting work of "crushing, magnetic separation, classification, weighing," and promotion and execution of refractories recycling.	• Consideration of the area expansion for subcontracting work	–

Towards the deepening of "sustainability management"

Yoshida: We have reviewed the "sustainability management" of our group so far, focusing on the five issues to prioritize. These activities, including the resolution of customer and societal sustainability issues, are recognized as the strengthening of our group business foundation, and contributing significantly to execution of our management strategy.

At the same time, we must further deepen our "sustainability management."

Fukuda: In our efforts towards carbon neutrality, one of the challenges is to develop the initiatives across our entire group, including the measurement and reduction of emissions known as "Scope 3." Especially, I recognize that obtaining CO_2 emissions data associated with raw materials from China is a challenge. We strive to acquire accurate information and reduce CO_2 emissions. The measures include a renewal of management software aimed at timely acquisition of various data within our group, and the promotion of understanding from our business partners. Furthermore, "process innovation" towards the CO_2 emission reductions of customers will accelerate. The high-grade refractories provided by our group are essential products for this process innovation. The progress of process innovation will bring significant opportunities to us. We believe it is important to support the process innovation of our customers towards CO_2 emission reductions and contribute to reducing the environmental impact of society as a whole while achieving business expansion of our group.

Yoshida: Human capital management is also extremely important for our group management when looking to the future. In particular, as the birthrate has been declining in recent years and attitudes toward work among the young have changed significantly, it is necessary to prioritize the securing and development of human resources that will support the future of our group. Through various initiatives for Diversity & Inclusion, we strive to improve employee engagement. In terms of talent acquisition, we will strongly promote diversification of recruitment sources, creation of recruitment videos, expansion of direct contact opportunities with students, and information dissemination including website renewal.

Information Disclosure Based on Recommendations of the TCFD

In June 2022, the KROSAKI HARIMA Group identified risks and opportunities from climate change and formulated responses intended to mitigate risks and secure opportunities.

Based on the TCFD recommendations, we have actively disclosed information on the four elements of Governance, Strategy, Risk Management, and Metrics and Targets

Governance

- We recognize sustainability topics such as consideration for climate change and other global environmental issues and respect for human rights as important management issues. For this reason, we have established "the Sustainability Promotion Committee," which is chaired by President, as an advisory council to the Board of Directors to deliberate on and steadily implement "the Sustainability Activity Basic Policy."
- This committee formulates the Company's policies and action plans on sustainability issues and initiatives, deliberates and reports on matters such as their progress and roll over, and reports to the Board of Directors.
- This committee is held twice a year in principle and / or when needed. It has "the Climate Change Sub-Committee" and "the Environmental Sub-Committee" to investigate, examine, and deliberate and report on priority topics related to sustainability.
  (See p.27 for a sustainability promotion organization chart)

Strategy

We have conducted qualitative and quantitative impact assessment and studied responses to transition and physical risks under the following scenarios.

- 1.5°C and below 2°C warming scenario
  References: IEA, "WEO2022 NZE,"
  IPCC, "Fifth Assessment Report: RCP2.6"
- 4°C warming scenario
  References: IEA, "WEO2022 STEPS,"
  IPCC, "Fifth Assessment Report: RCP8.5"

1.5°C and below 2°C warming scenario

- Since the possible introduction of carbon taxation in transitioning to a decarbonized society would have a major impact, we consider it important to minimize risks by reducing Scope 1 and 2 emissions.
- We also consider calculation and reduction of CO_2 emissions throughout the entire supply chain (Scope 3) to be an important topic for the future.
- We expect sales of our products that can contribute to a decarbonized society to increase as a result of stronger regulations.

4°C warming scenario

- Considerable impact of increasingly severe weather abnormalities are involved, we will continue to improve our infrastructure in preparation for disasters, that can help to mitigate risks.

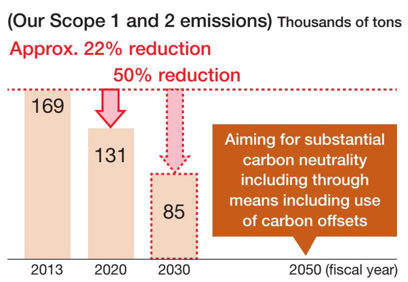
Risk Management

- We established a working group on climate-change risks, and conducted scenario analysis, and prioritized climate change risks. We have been focusing on the risks at right table, which involve high impacts, based on the likelihoods and impacts of risks and opportunities. The Climate Change Sub-Committee of the Sustainability Promotion Committee will carry out continuous review of risk management.
- The climate-change risk management process includes analysis of risks related to climate change, proposing and promoting countermeasures, and progress control. These are conducted by the Climate Change Sub-Committee in the Sustainability Promotion Committee.
- Details deliberated and reported in the Sustainability Promotion Committee are submitted to the Board of Directors for company-wide integrated risk management.

Metrics and Targets

- Setting reduction targets and metrics for total CO_2 emissions

FY2030	FY2050
Reduce Scope 1 and 2 emissions by 50% (vs. 2013)	Achieve substantial carbon neutrality on Scope 1 and 2 emissions through means including use of carbon offsets



Main reduction initiatives

- Productivity improvements in manufacturing processes, recycling, energy saving, change in product mix, etc.
- Supplying products and solutions to contribute to CO_2 emission reductions societywide
- Calculating and reducing Scope 3 emissions

Major Climate-Change Risks and Opportunities, and Our Responses

Impact: ⬆ > ↑ ⬇ > ↓

Scenario	Factor	Change	Risk/ Opportunity	Impact	Impact on the Company	Measures taken by the Company	Current initiatives
1.5°C/ below 2°C	Increase in societal demand for CO_2 emission reductions (Refractories field)	Increase in demand for environmentally friendly refractories	Opportunity	↑	• Demand is expected to increase for unfired refractories and monolithic refractories, which emit less CO_2 during manufacturing processes	• Strive to improve the performance of unfired products and monolithic products, and expand their applications in line with customers' business environments, and proactively introduce environmentally friendly refractories	• Replacing part of the fired bricks with unfired bricks, and promoting its application to practical use • Developing and expanding sales of Dry-free monolithic refractories • Developing flow control refractories that do not require preheating and promoting them in practical use
		Increase in demand for refractories compatible with new steelmaking methods	Opportunity	↑	• Demand for refractories is expected to increase for new steelmaking process such as the hydrogen reduction steelmaking	• Establish evaluation techniques and develop refractories suitable for new steelmaking process, to support their practical use	• Investigating changes in the properties of refractories caused by firing in a hydrogen atmosphere • Joint research underway with users and third-party institutions
		Increase in demand for refractories for electric furnaces	Opportunity	⬆	• Demand for refractories is expected to increase for high-grade steel production process using electric furnace	• Strive to provide comprehensive solutions for production of high-grade steel using electric furnaces and develop appropriate refractories	• Continuing evaluation in practical use of our materials proposed for electric furnaces at a direct reduction iron plant • Dispatching engineers to user sites. Enhancing knowledge on electric furnace design, operation, and refractories application technologies
		Increase in demand for decarbonization of manufacturing processes	Risk	⬇	• Capital investment may be needed for energy-saving equipment	• Strive to reduce CO_2 emissions from our operations by modifying product specifications and introducing energy-saving and high-productivity furnaces and equipment	• Saving energy and reducing CO_2 emissions by shortening or omitting manufacturing processes, optimizing drying and firing conditions, updating and consolidating production facilities, replacing them with high-efficiency equipment, and switching to LED lighting
	Increase in societal demand for CO_2 emission reductions (Furnace/ Ceramics field)	Increase in demand for energy-saving power generation equipment	Opportunity	⬆	• Orders are expected to increase for products to be used in energy-saving power generation equipment	• Expand the furnace business through leveraging our expertise in products and construction services integration	• Continuing to take orders and expand sales activities for boilers for use in power generation, including biomass power generation
		Increase in demand for environmentally friendly ceramics products	Opportunity	⬆	• Demand for insulation materials is expected to increase for household fuel cells and high-performance insulation materials for large storage batteries	• Strive to enhance production capabilities and develop new products	• Continuing to manufacture and deliver insulation materials for household fuel cells. Developing high-performance insulation materials and aiming to grow their sales further in response to the needs for smaller sizes and higher efficiency
		Increase in demand for ceramics related to EVs	Opportunity	↑	• Demand for ceramics products may increase due to higher demand for EVs	• Strive to enhance production capabilities and develop new products	• Enhancement of development and production capabilities for nano-insulation materials for lithium-ion batteries (LIBs)
	Impact of the introduction of carbon pricing	Increase in operating and procurement costs	Risk	⬇	• The manufacturing processes of many raw materials for refractories emit CO_2. If suppliers pass the cost on to sales prices, the impact will be very large. • Costs may also be incurred in its own operations	• Reduce costs and consider passing costs on sales prices, depending on the situation • Steadily implement various reduction measures	• Calculating Category 1 of Scope 3 emissions, collecting data of suppliers' CO_2 emissions, and promoting reductions in emissions. Formulating a purchasing policy that takes CO_2 emissions into account • Implementing measures to achieve the target of reducing CO_2 emissions by 50% by FY2030
4°C	Natural disasters (acute)	Risk of damage to the Company and its supply chain	Risk	↓	• Our facilities and procurement of raw materials may be affected, depending on the frequency and scale of the disaster	• Continue to develop disaster-resilient infrastructure even though the degree of expected damage and its probability are low considering the location of the Company • Diversify sources of procurement	• Investigating and estimating disaster risks at individual plants and offices and planning and implementing countermeasures • Securing alternative suppliers for subject raw materials and establishing the technologies needed to use alternative raw materials, as BCP measures
		Increase in demand for satellite-related products due to increased frequency of natural disasters observation	Opportunity	↑	• Demand for ceramics products is expected to increase for earth observation satellites and meteorological satellites	• Consider product development and capital investment according to customer needs	• Building a track record toward market entry • Cultivating the market for small satellites, of which mass production is expected in the future, and developing technologies for supplying components to the market for large satellites

Carbon Neutrality Initiatives

In October 2021, we announced our goal of reducing Scope 1 and Scope 2 CO_2 emissions from our business activities by 50% by FY2030, and achieving substantial carbon neutrality by FY2050.

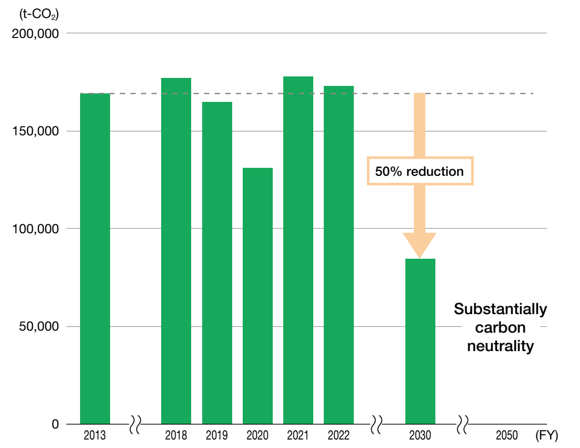
CO_2 emissions in FY2022 increased by approximately 2% compared to the base year of FY2013. But this was mainly due to increased production, and the emission intensity was reduced by 7%. Going forwards, we will continue to promote measures to reduce emissions, including energy transition, production consolidation, and reducing in-process losses.

To expand the scope of CO_2 emission reductions in accordance with GHG Protocol, we calculated the CO_2 emissions of seven manufacturing bases in Japan and overseas, and combined these with our own non-consolidated data to calculate Scope 1 and Scope 2 emissions. We are working to reduce CO_2 emissions by sharing information with these affiliated companies and promoting to roll out measures across our group.

We also tried to calculate Scope 3 emissions to understand the CO_2 emissions throughout the entire supply chain. Where it was difficult to obtain primary data from suppliers of raw materials and products, we used the emission basic unit from the IDEA and the Ministry of the Environment's database for calculations.

CO_2 Emissions Scope1+Scope2

Calculation Target KROSAKI HARIMA CORPORATION and KROHARI CHIKURO CORPORATION



Scope/Category		CO_2 emissions [t-CO_2]
Scope1		282,115
Scope2		98,852
Scope3 (*)		785,688
Category 1	Purchased goods and services	(717,567)
Category 2	Capital goods	(16,907)
Category 3	Energy excluding Scope 1 and 2	(23,561)
Category 4	Upstream transportation and distribution	(5,561)
Category 5	Waste from operations	(3,794)
Category 6	Business travel	(1,058)
Category 7	Employee commuting	(2,821)
Category 8	Upstream leased assets	Not included in calculation
Category 9	Downstream transportation and distribution	Not included in calculation
Category 10	Processing of products	Not included in calculation
Category 11	Use of sold products	(12,442)
Category 12	End-of-life treatment of sold products	(1,979)
Category 13	Downstream leased assets	Not included in calculation
Category 14	Downstream franchising	Not included in calculation
Category 15	Investments	Not included in calculation
Total		1,166,655

* Scope 3 emissions were provisionally calculated using IDEA (v3.1) and the database of Ministry of the Environment for emission basic unit. Scope 1 and Scope 2 emissions were calculated for Krosaki Harima Corporation and 7 manufacturing bases at affiliated companies in Japan and overseas (see below).
- KROHARI CHIKURO CORPORATION (Japan)
- SN Refratecture Tokai Co., Ltd. (Japan)
- TRL KROSAKI REFRACTORIES LIMITED (India)
- Wuxi Krosaki Sujia Refractories Co., Ltd. (China)
- TRL KROSAKI CHINA LIMITED (China)
- Krosaki Amr Refractarios, S.A. (Spain)
- Refractaria, S.A. (Spain)

Category 1 (purchased goods and services) emissions account for about 60% of the total. As a result of more detailed analysis, we have been able to identify the types of raw materials, products, and product suppliers that should be prioritize for reductions. Going forward, we will continue to promote emission reductions and collection of more accurate information, including primary data, through cooperation with related parties.

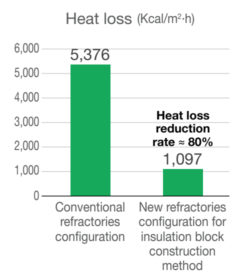
Contributions to Customers' CO_2 Emission Reductions

Dry-Free Series Monolithic Refractories

Monolithic refractories are generally installed on-site, cured, and then dried to remove moisture before use. The fuel is burned as a heat source during the drying process and CO_2 is emitted. The Dry-Free Series is a non-cement gunning material that uses a binder with high-permeability, high-adhesion, and a drying process before use is not required. In addition to reducing CO_2 emissions, it reduces fuel costs and shortens lead times. In the future, we aim to eliminate the drying process for castables as well.

New Insulation Block Construction Method for Reheating Furnace Skid Pipes

The heat loss from water cooling the skid pipes accounts for 10% of the total heat loss from reheating furnaces in steelworks. With the insulation block construction method, metal studs can be removed, and by applying insulation castables, this heat loss can be reduced by approximately 80%. Block construction also reduces construction man-hours. As a result of trial use at steelworks, the durability was extremely good compared to conventional poured construction, and it was decided to conduct an expanded test (as of 2023).

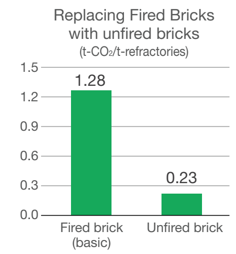


Developing Non-preheating Nozzle for Continuous Casting

Immersion nozzles for continuous casting used in steelworks require high thermal shock resistance because high-temperature molten steel passes through the inner hole of tubular refractories. At present, they are preheated before actual use to prevent cracking. To improve this process, we are considering eliminating the preheating process with highly corrosion-resistant materials, different materials within the same nozzle, and composite final products. They are composite materials with high expansion coefficients and different expansion coefficients, it was very difficult to commercialize. But, we have overcome these challenges and are significantly contributing to reducing CO_2 emissions related to preheating and shortening lead times.

Replacing Fired Bricks with Unfired Bricks

Since unfired bricks do not require a high temperature firing process, and their CO_2 emission intensity is significantly lower compared to fired bricks. So by using them in place of fired bricks, Scope 3 emissions of customers can be reduced. We are working on replacing fired bricks with unfired bricks and incorporating them into actual furnaces.



• Graphite-free MgO-C bricks for secondary refining

Basic fired bricks have conventionally been used as lining refractories for secondary refining furnaces, such as vacuum degasser. Recently, we have developed MgO-C unfired bricks which do not use graphite, and have greatly expanded the scope of use in place of fired bricks. Going forward, we will continue to develop products, including adjusting its composition, while working to expand sales.

• High-durability MgO-C bricks for converter charging pad

The charging pad in the converter is the area that is directly hit by the iron scrap charged to reduce the hot metal ratio, and the bricks in this part are required to have high strength and high fracture energy. High-durability MgO-C bricks have successfully improved the fracture energy by approximately 30% compared to conventional unfired bricks. They also contribute to maintaining and increasing the iron scrap usage ratio.

Highly Functional Insulation Materials

We have been selling WDS®, a highly functional insulation material with a lower thermal conductivity than still air which can minimize the energy loss that is wasted without being converted to electricity or power. In addition to applying this to the back of refractories to reduce heat loss, it has also been applied to hot modules of fuel cells and to lithium-ion batteries (LIBs), contributing to improved functionality.

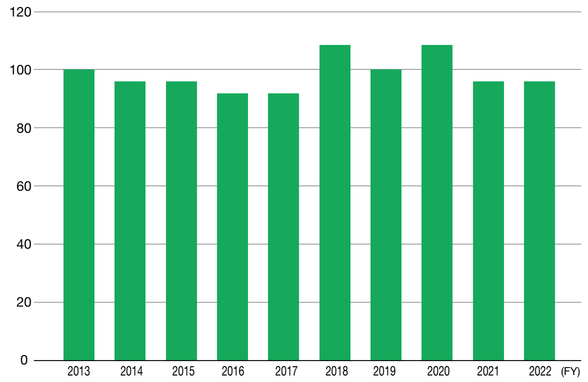
In May 2021, we succeeded in independently developing KROTECT®, which has even lower thermal conductivity, and registered the name as a trademark. It can be used to make fuel cells lighter and more compact, and further improve the safety of lithium-ion batteries.

Reducing the Impact of Industrial Waste Discharge on Living Organisms

Reducing Industrial Waste

The graph on the right shows the amount of waste refractories and sludge discharged as industrial waste from each of our individual plants, expressed as a waste basic unit ratio. Since 2013, we have gradually reduced the amount of waste discharged in the production of refractories by improving yields and promoting recycling. But the yield of some refractories has declined due to factors such as increased quality level requirements from customers, and the decrease in waste output has stalled since FY2018. We are currently working to improve the quality of recycled raw materials by separately collecting the waste refractories, and developing applications to waste refractories other than refractories.

Company-wide industrial waste (waste refractories + sludge) per basic unit ratio



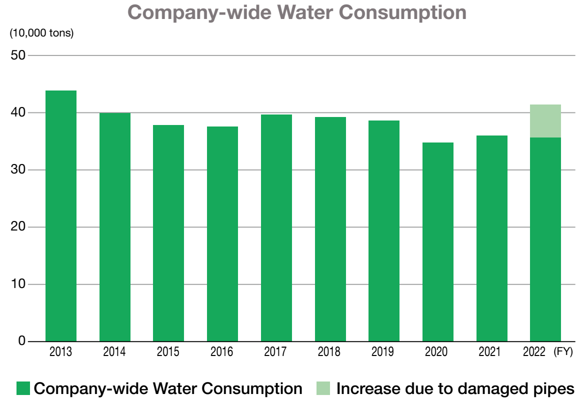
*1 Index shown sets waste basic unit for FY2013 at 100
*2 The basic unit is the numerical value calculated by dividing the amount of waste generated by the production amount of refractories and ceramics products.

Thorough Management of Wastewater Treatment in Production Process

We have decreased our overall water consumption each year by extending our system for purification and reuse of wastewater generated during refractories cutting and polishing processes that use water. In fiscal 2022, water pipes were damaged and water leaks occurred due to the strong cold wave, resulting in an increase in apparent water consumption.

Going forward, we will work to strengthen wastewater management, expand our efforts to recycle and conserve water through wastewater purification, and strive to make water usage visible by quantifying our water recycling rate.

Company-wide Water Consumption



Training to Prevent Pollution of Public Waters

Every year, in the Yahata and Bizen Areas, we conduct drills using sandbags to block water and extend oil fences in case of an accident in which oil spills into rainwater gutters. We conduct these drills under the assumption that such spills would flow into the Kuki river which flows through the Yahata Area, or into the adjacent Seto Inland Sea in the case of the Bizen Area. We estimate the risk of accidents for each workplace and conduct drills, and so even in the unlikely event that an environmental accident does occur, each worker will be able to rapidly respond and protect rivers and seas from pollution.

Oil fence extension drill (Yahata Area)

Promotion of Recycling

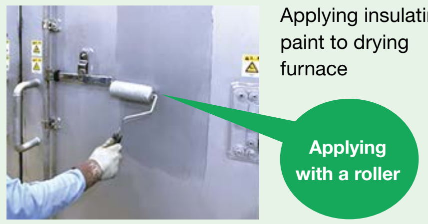
Recycling Industrial Waste Generated by Our Company

Cut pieces, processing dust, and collected dust are generated as waste during the processing of refractories and other ceramics. In addition, scraps of raw materials and compounds are generated as waste during weighing and mixing various raw materials. We have been recycling reusable waste materials for some time, but have been disposing of those that are difficult to reuse as industrial waste.

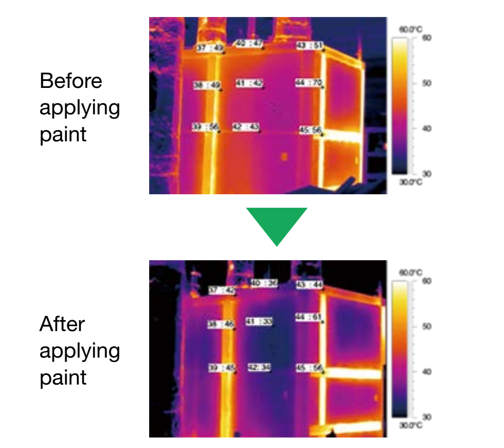
In addition to the waste recycling that we have been implementing at our refractories plants for some time, we have started new initiatives to recycle the waste generated by our ceramics plants.

Measures taken for further recycling

- Mixing dust collected from insulation materials into paints, applying them to electric furnaces and drying furnaces (heat shielding—environmental improvement, energy saving)
- Thorough execution of separate collection
- Expansion of the scope of application of collected materials to raw materials for refractories



Applying insulating paint to drying furnace



Recycling Refractories in Collaboration with Steelworks

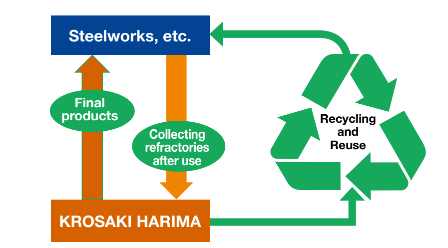
We have utilized recycled products since our founding, and for over 20 years, we have been collaborating with customer steelworks to apply recycled products to refractories materials while ensuring quality, and continue working for even further application. In addition, we also collect flow control refractories after use, and promote their reuse by processing and removing just the parts that are severely damaged and replacing them with new parts.

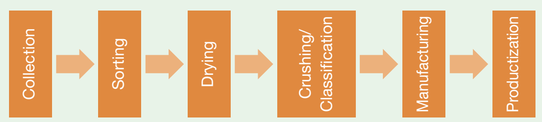
On top of the above, we engage in contract recycling work for steelworks, and promote the recycling of refractories through comprehensive efforts ranging from the collection and sorting of refractories after use, to mixing them into products.

Going forward, we will continue to actively engage in recycling initiatives, contributing to reducing the use of refractories raw materials, which are finite resources, and reducing industrial waste and CO_2 emissions to realize a recycling-oriented society.

Used refractories after crushing and classification

Refractories recycling workflow





Diversity & Inclusion (D&I) Initiatives

We have set D&I policies and management targets with the aim of creating an environment where employees can maintain and demonstrate high productivity, and work with pride and satisfaction for a long period of time.

D&I policy

We have established the D&I policy as follows based on its Mission Statement, etc.

- Our company strives to create and provide values by respecting the humanity of each employee and embracing their unique personalities through collaboration among employees in their daily work and dialogue activities in the workplace.
- Respecting human rights is the foundation of our business activities, and we strive to eliminate unjust discrimination based on nationality, race, religion, ideology, gender, age, sexual orientation, disability, and other factors.
- In order to support the development of industries in the future, contribute to the prosperity of society and continue growing as a "a world-class comprehensive ceramics company that is a leading value provider to steel and other industries" in the changing environment surrounding us, we acknowledge the importance of our employees accepting diverse values each other, and maximizing their productivity and ability to perform with pride and satisfaction. Based on the above, we are dedicated to D&I.

D&I priority initiatives

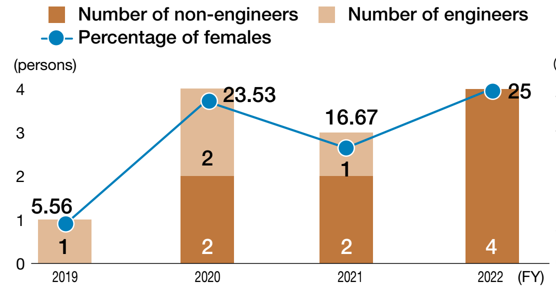
The priority items for D&I, management targets and their indicators are set as follows.

1) Promoting females' participation... Utilizing the diversity of employees (related to diversity)
2) Work style and rest style... Aiming to improve employee productivity (related to work style reform)
3) Promoting health ... Improving employee productivity (related to work style reform).
4) Construction of a workplace, including division of roles and management in the workplace, that is easy for employees to work in... Prevention of harassment and improvement of work ethic

Promotion of females' participation

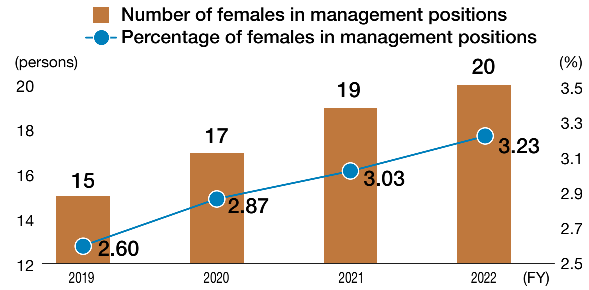
Vision	• Based on the current system, we encourage females to fully demonstrate their abilities according to their life stages until retirement. In addition, we expand the scenes where females can play an active role in all workplaces and levels, such as promoting females to executive positions and expanding their job responsibilities.
Targets	• By 2025, the hiring ratio for new graduate female staffs in career-track positions is set at 20% or more, and by 2030, at 30% or more. • By 2030, we aim to increase the proportion of females in management positions to more than 1.5 times the current level (19 people, 2.9% as of November 2021), and then to 2 to 3 times as soon as possible.
Specific measures	• Expanding the recruitment of female staffs in career-track positions on the assumption of hiring based on individual abilities. In terms of technical workers and furnace construction technical workers, considering the decreasing number of workers in Japan in the future, we strive to create a work environment suitable for female labor and implement of females recruitment as much as possible. In addition, we promote the appointment of females to management positions and implement the expansion of females' appointments at all levels. • We review the treatment and working system to accommodate life events such as marriage, pregnancy, childbirth, and child-rearing. • Females in career-track positions will be assigned to various departments based on their abilities and aptitude. In workplaces where females are newly assigned, we also consider implementing training and other measures for their placement.
FY2022 results	• Ratio of females in the new graduates hired for career-track positions: 25% in FY2022 (17% in FY2021) • Ratio of females in management positions: 3.23% in FY2022 (3.03% in FY2021)

Recruitment situation of new graduate female staffs in career-track positions



FY	2019	2020	2021	2022
Total number of new graduate female staffs in career-track positions (persons)	18	17	18	16

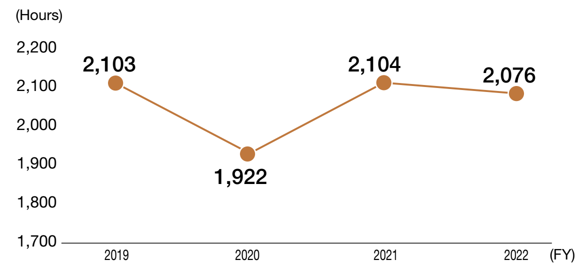
Percentage of females in management positions (end of each fiscal year)



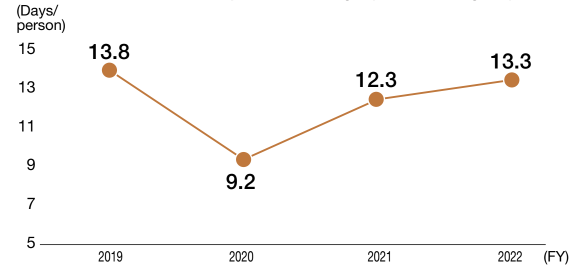
Work style and rest style

Vision	• In order to enable our employees with diverse abilities to maximize their potential in the long term and efficiently, we aim to have them work in a way that takes into account the circumstances of each individual employee, keeping flexibility of the length of working hours or the location of work, and achieve the best results.
Targets	• By 2030, the average annual total working hours for the entire company is set below 2,000 hours per year. • Long working hours (overtime work: more than 80 hours per month) will be reduced by half by 2025 compared to the results of the fiscal year 2020, and eliminated by 2030. • By 2025, all employees will take 15 days of annual paid leave per year. • By 2025, we will conduct a system change in order to make it easier for male employees to take childcare leave and childcare-related vacations, and encourage all individuals to take time off and rest.
Specific measures	(1) Work style • We aim to eliminate long working hours and achieve a flexible and efficient working style through the utilization of teleworking and flextime systems, and the promotion of DX. • Managers achieve maximum results by working as efficiently as possible without falling into long working hours. • Under the management of working hours by managers, staff members carry out their duties within a limited time. (2) Rest style • We encourage employees to take planned annual paid leave according to their own convenience. • We encourage male employees with children in the childcare period to take childcare leave and parental leave. The human resources department conducts a review of various systems, including information provision, education and training for workplace environment improvement.
FY2022 results	• Total annual working hours were 2,076 hours (2,104 hours in the previous fiscal year). • Annual paid leave days were 13.3 days per person (12.3 days per person in the previous fiscal year). • The establishment of a childcare allowance (2,000 yen per month per child for children under 18 years old) • Promotion activities for childcare leave and childcare purpose leave (The rate of childcare leave taken by male employees was 22.0%, and the rate of childcare leave and childcare purpose leave taken by male employees was 89.8%.)

Total annual working hours (each fiscal year)

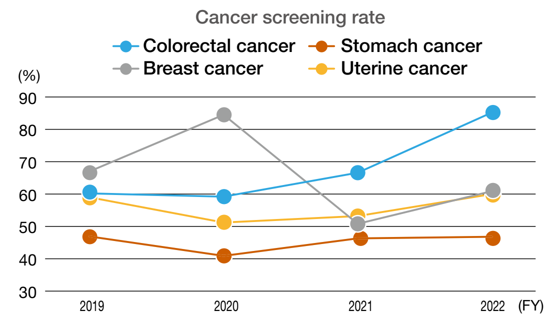


Number of annual paid leave days (each fiscal year)



Promoting health

Vision	• To maximize the diverse abilities of employees effectively in the long term, it is necessary for employees to stay healthy. To achieve this, both employees and the Company need to create a culture of promoting health.
Targets	• The target is to achieve the following numbers for the cancer screening attendance rate by 2025 (management should take the lead and undergo screening as much as possible). (1) Colorectal cancer screening (age 35 and older): 90% (2) Stomach cancer screening (age 35 and older): 70% (every 2 years). (3) Breast cancer screening (female): 80% (4) Uterine cancer screening (female): 70% • The goal of the Krosaki Harima Health Insurance Association is to increase the implementation rate of specific health guidance to more than double the 2021 performance by 2025.
Specific measures	• We strive to promote initiatives aimed at enhancing the participation rate of diverse health screenings for the timely identification and treatment of cancer. Furthermore, we aim to bolster the enforcement of specific health guidance based on the outcomes of health assessments, while also encouraging employees to proactively enhance their personal well-being. • Krosaki Harima Health Insurance Association has set up and encourages the use of "Krosaki Harima Family Health Consultation," "Best Doctors Service," and "Mental Health Counseling," where external specialists respond to concerns and worries about the mental and physical health of employees and their families by phone, etc.
FY2022 results	• The cancer screening rate for the fiscal year 2022 (previous year's results in parentheses). (1) Colorectal cancer screening: 85% (66%) (2) Stomach cancer screening: 46% (46%). (3) Breast cancer screening: 60% (50%) (4) Uterine cancer screening: 60% (53%) • Specific health guidance implementation rate for fiscal year 2022 45.0% (previous year's performance: 18.2%).



Construction of a workplace that is easy for employees to work in, including division of roles and management in the workplace

Vision	• We create a workplace where diverse employees can work diligently with pride and satisfaction alongside their supervisors, colleagues, and subordinates. In order to achieve this, we strive that all employees adhere to comply with discipline and naturally demonstrate considerate behavior.
Specific measures	● Dialogue activities in the workplace • Based on the belief that the basic of an easy-to-work workplace is to create a culture where each employee can openly and honestly communicate with their superiors, colleagues, and subordinates, considering each other's feelings, without any hidden agenda, we continue and promote dialogue activities in the workplace. ● Preventing harassment • We have established a "Harassment Prevention Code" and set up a consultation and reporting desk to thoroughly keep each workplace from various forms of harassment. While carefully paying attention to the protection of whistleblowers, we handle the cases that have been recognized by investigations strictly in accordance with our rules of employment, etc. In addition, in order to prevent harassment in advance, we conduct education for officers and managers, such as E-Learning to raise awareness, anger management training, and harassment prevention program in internal hierarchical education, so that everyone from newcomers to managers can repeatedly learn about harassment. ● Implementation of training to properly manage the workplace and provide guidance and coaching to subordinates • To build a comfortable workplace, it is necessary for the manager of each workplace to properly guide each subordinate. Therefore, in hierarchical education, it is necessary to establish a mechanism to enhance the management skills, such as recognizing the position and role as a manager/supervisor, the way of leadership required, advice to subordinates, and coaching methods. ● Future initiatives • As an initiative to improve engagement of our employees (efficient and sustainable work style), we conduct an engagement survey from the fiscal year 2023 for the purpose of understanding the challenges and considering countermeasures.
FY2022 results	• Continuous dialogue and its follow-up activities in each workplace, as well as guidance to managers and for workplace improvement activities based on employee awareness surveys and stress check results • Establishment of the D&I course in in-house training.

Human resource development initiatives

Every year, we formulate and implement a human resource development and capability development plan.

We strive to improve decision-making skills and business skills of our employees through daily conversations with superiors and subordinates, and implement personnel development through business practices. In addition, in OFF-JT, which includes training by external teachers, we actively promote development of general skills and specialized abilities of each employee according to the job category and hierarchy of each employee.

Under our corporate philosophy, as stated in our Mission Statement (please refer to P3-4), we have defined "Corporate culture where individuality is encouraged" as "Our Pride" and "respecting the humanity of each employee and providing opportunities for personal growth and self-realization." as our "Management Policy." Based on this culture and policy, we are actively promoting the securing and education of diverse talents and the development of capabilities through the "personnel development and capability development plan" mentioned above.

Details of our human resource development system are as follows.

General type	Specific type	Overview
Hierarchical education	–	Education and training to acquire the knowledge, skills and attitudes required in each position at each level
Departmental education	Department-specific education	Education and training to acquire the specialized knowledge, skills and attitudes required in each department
	On-the-job training	On-the-job training of the knowledge, skills and attitudes required to perform the duties, as per supervisors' direction based on the management by objectives system
	Self-education	Employees' autonomous abilities development activities such as acquiring qualifications, techniques and skills that are recognized by a first-line supervisor as beneficial for the performance of the duties at the Company, and are supported by the Company
	Language education	Education in foreign languages required to perform duties in the relevant department
Company-wide education	General education	Education and training to acquire general and specialized knowledge, skills and attitudes required to perform the duties
	Study elsewhere in Japan	Providing opportunities for employees who wish to acquire bachelor's or associate degrees to pursue further education required for the performance of the duties
	External and overseas training	Dispatch of employees to university research bodies in Japan and overseas as required for the performance of the duties, to acquire and enhance advanced techniques, absorb a broader range of specialized knowledge, and expand their technical horizons
	Overseas talent development dispatch	Dispatch of trainees to overseas group companies for the purpose of developing human resources capabilities of playing an active role abroad, and promoting collaboration between the Company and overseas group companies
	Language education	Employees who wish to improve their own level of foreign language proficiency may apply for and receive an education recommended by the Company

Hierarchical-based training system

		Career-track position: Engineers	Career-track position: Non-engineers position	Technical work	Furnace construction technical work	Common training
New employees (1st year)	April	Training for new employees				Krosaki Harima College*; Department-specific education: Education and training on the specialist knowledge, skills, and manners required by each department; Overseas language training
	April ~ May	On-site training at the factory		Workplace assignment (On-the-job training)	Workplace assignment (On-the-job training)	
	June	Ceramics evaluation and analysis training	Sales and process cost training			
	June	Professional mindset training				
	July	Assigned to regular post				
	August	Process design training (3D-CAD/material mechanics and heat transfer/structural analysis/fluid analysis)	Bookkeeping training (until October)			
	September	Presentation training				
	November		Nissho Bookkeeping Certificate Exam			
2nd year	April	Work progress briefing				
Mid-career employees		Mid-career employee training; Problem solving training; Supervisor training	Overseas talent development dispatch system	B2 training (young employees with around six years of experience with the Company); B1 training (next-generation of leaders with around 12 years of experience with the Company)		
Managers and supervisors		Basic management training; Hierarchical-based training for management-level employees		Candidates for foreman positions; General foreman training		

* Krosaki Harima College.........Krosaki Harima College was established as an internal training platform for office work employees as a way to inherit the essential technical specialist skills required by the Company (ironmaking processes, refractories materials, ceramics, etc.), and to acquire business knowledge, with topics ranging from health and safety, finance and legal affairs, labor management, and others. In FY2022, a total of 29 courses were provided to cumulative total of 1,085 employees. Under this training system, employees act as instructors, passing on the contents of the training to other employees, who will go on to serve as instructors further down the line.

Priority initiatives for FY2022: Implement educational tools to develop human resources capable of responding quickly to changes in the social environment

We launched an online video training platform in October 2022, which was made available to all office work employees in FY2023. In addition to digital technology courses, this platform also provides general knowledge courses and courses on topical social issues (e.g. SDGs/ESG, D&I, etc.), which are available at any time. Looking ahead, we are looking to actively leverage these courses to provide the skills training needed to quickly respond to changes in the social environment.

To ensure the sustainable development of the Company, it is essential to secure a safe working environment and foster employees' health. Therefore, we recognizes "occupational safety and health" as an important issue and actively conducts various safety education programs.

Basic Policy on Safety and Health

[Principles]
1. The safety and health of employees is the most important value for the Krosaki Harima Group and the foundation that supports business development.
2. Under the management philosophy of respecting the humanity of each employee and providing opportunities for personal growth and self-realization, we make continuous efforts to ensure the safety and health of the people working in the Krosaki Harima Group in compliance with laws and regulations.
3. Through these efforts and activities, striving to eliminate accidents and disasters, we continue to contribute to society.

[Specific guidelines]
1. We comply with relevant laws and regulations, ensure the safety and health of employees in all business operations, and strive to eliminate accidents and disasters.
2. We understand the actual situation on site through dialogue, take necessary measures to ensure safety and health, and work together to eliminate factors that lead to accidents and disasters.
3. To achieve a safer and healthier working environment, we implement measures related to equipment and facilities in a planned manner.
4. We implement measures to apply learnings from disasters and other incidents company-wide, prevent weathering, and actively engage in hazard prediction (KY) activities.
5. We conduct necessary education to ensure that the people working in our group comply with the rules and continue to improve safety standards.
6. Through these initiatives, we continuously enhance and improve our safety, health, and disaster prevention activities.

Workplace safety activities

We are working on various activities such as improvement, practice, and education related to safety.


Forklift blind spot exercises

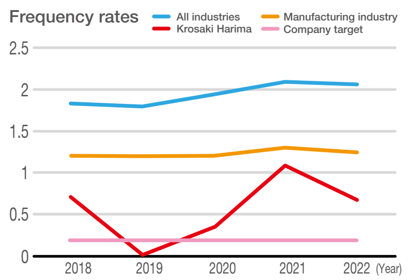

Forklift exercises

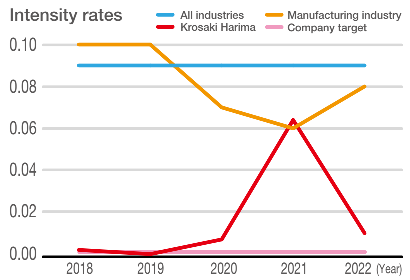
Active investment in safety


As a measure against heatstroke, we are also focusing on improving the working environment by installing air conditioning, and realizing a comfortable workplace.


The opening of mixer is equipped with a limiter switch, which prevents people from approaching while the mixer is in operation.

Accident statistics





The frequency of occurrence of accidents is represented by the "Frequency rate," which is the number of fatalities and injuries due to occupational accidents per one million actual working hours.

The "Intensity rate" represents the severity of a disaster in terms of the number of days of labor loss per 1,000 hours of actual working time.

The Krosaki Harima Setouchi Factory (Akou Plant) won the WRA Safety Awards 2023 Bronze Award.

The Ako Plant of our company was awarded the WRA Safety Awards 2023 Bronze Award as a result of a rigorous evaluation of the safety performance for the fiscal year 2022 by the WRA (World Refractories Association) Safety Committee.

Once every two years, WRA issues a safety certification to workplaces that have achieved 5 years or 1 million hours of zero-lost-worktime injuries. From those workplaces, safety award winners are selected. Ako Plant received its second safety award following the Special Award 2020 by judges.

The following plants were awarded the Safety Facility Certification from WRA.

Ako Plant, Oita Taphole Clay Plant, Kisarazu Monolithic Plant, Takasago Monolithic Plant, Chiba Plant, Nagoya Taphole Clay Plant, Yahata Plant


WRA Safety Awards 2023 Bronze Award

TRL KROSAKI REFRACTORIES LIMITED won the NSCI Safety Award for 2020 Golden Trophy.

Our above-mentioned group company in India has been recognized by the National Safety Council of India for its three-year track record of accident-free performance and commitment to safety. It has been selected as the best among numerous well-known companies in the steel, cement, engineering, and other sectors, and has received the Golden Trophy.


NSCI Safety Award for 2020 Golden Trophy

Looking ahead, we continue to promote initiatives in line with our Basic Policy on Safety and Health.

The Krosaki Harima Group positions "coexistence with local community" as an important theme for the realization of a sustainable society and is engaged in activities to contribute to the community.

Contributing to the realization of a circular society and the creation of a livable town

We have been selling bricks made from urban waste materials such as tiles and glass bottles, and industrial waste materials such as molten slag, since the 1990s when we entered the landscape material business. These products are called the "Eco-Material Series." Currently, we develop and deliver products using ceramic waste materials from our own company and nearby factories, and have obtained certifications such as Eco Mark that complies with the Green Purchasing Law and recycling certification promoted by local governments.

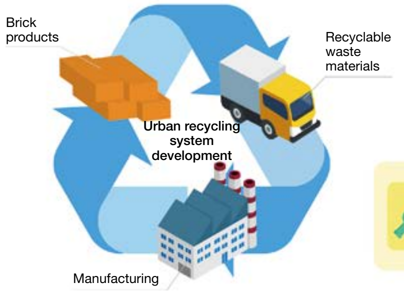
We continue to contribute to the development of a circular town through new product development in the future.

The main products of the Eco-material series


Recycled Brick
Neo Series
Certification A B C


Recycled Thin-layer Colored Paving
Cera-stage
Certification C


Recycled Flat Plate
KROSAKI LS Paving ~ Tile ~
Certification C



Amount of used waste materials

Total **17,500 t**

That equals

Glass	Ceramic sand (Ceramic scrap)	Ceramic waste soil
6.2 million bottles (350 ml glass bottles)	8,000 t	3,700 t

A: Eco Mark Certificate 05 109 028 05 109 029

B: RE-CYCLE Fukuoka Prefecture-certified recycle product

C: Kitakyushu City-certified construction recycling material

The contribution to community development through the delivery of eco-material series

1. Kokurakita area, Kitakyushu

The city of Kitakyushu, where our company is headquartered, is working towards becoming a global environmental capital. As part of this effort, the redevelopment of Kokura center (including the area around Kokura Station, the Murasaki River, and Katsuyama Park) has been progressing. The products of our recycled bricks, including the "Neo Series" and other eco-material series, have been adopted as products that meet the purpose of refurbishment in this maintenance area.


Daimon Kimachi Line featuring Neo Series products (Kokurakita, Kitakyushu City, Fukuoka)

2. Nagasaki Stadium City Project (in progress)

The complex facility "Nagasaki Stadium City" (scheduled to open on October 14, 2024), which is being developed in Nagasaki, has a project called "Engraving Names" that allows names and messages to be engraved on the paving bricks used in the facility. Our eco-material series bricks have been adopted for the paving section.

Artist's concept of the completed Nagasaki Stadium City

Overseas initiatives

TRL KROSAKI REFRACTORIES LIMITED, our subsidiary company in India, provides safe water and toilets in Belpahar, the location of our main factory (in Odisha state). We also provide medical services through hospital operations, promote preventive healthcare programs, and support the creation of a safe and sustainable community by providing educational opportunities through school operations.


Ensuring a safe and securing living environment through the provision of clean drinking water by the installation of purification equipment


Toilet installation for local hygiene improvement and better town development


Building healthcare camps in remote areas, and providing free medical care to low-income individuals


As part of the health promotion program, counseling for pregnant females and parent-child health events are implemented.

Developing the next generation of human resources responsible for the region

The Krosaki Harima Group is engaged in various activities to foster the next generation of talent responsible for the Local community.

Initiative	Title	
Contributing to the development of the next generation of human resources that will lead the future of the local community.	1. Recycled bricks as a graduation project of elementary school students in Kitakyushu City 2. Donation of landscaping bricks and tiles to Tanga Market (Kitakyushu City) 3. Sponsor of flower bed projects as part of the Kitakyushu City's urban flower development project 4. Kitakyushu City Road Supporter member activities 5. Supported Kitakyushu Marathon 2022/2023 6. Supported Fukuoka International Marathon 2022/2023	7. Provided operational support for Kurosaki Day September 6 and the Kurosaki Gion Yamagasa Festival 8. Providing operational support through the acquisition of naming rights for the Kitakyushu City Honjo Athletics Stadium (KROSAKI HARIMA Athletics Stadium in HONJO) 9. Co-sponsored Tour de Kyushu 2023 10. Providing donations and co-sponsored Kioi Hall, Kyushu University and others 11. Becoming an affiliate of the Kitakyushu Municipal Museum of Art
Community ties and human resource development through our track and field club	1. Successive champion of the Kyushu Industrial Teams Mainichi Ekiden 2022/2023 2. Finished 14th overall in All Japan Industrial Teams Ekiden Championship (New Year Ekiden) 2023	3. Dispatch of instructors to the "Running Clinic" related events of the Kitakyushu Marathon. 4. Support for running classes for children

Collaboration and talent development with the community through the activities of the track and field club

Our track and field club has been supporting the health of the community through various activities such as athletic events, sending instructors to running clinics, and participating in running classes for children at training camps since its establishment in 1961. In recent athletic events, we were able to achieve results such as having two athletes participate in the October 2023 Marathon Grand Championship (MGC) and winning the Kyushu Industrial Teams Mainichi Ekiden (Ekiden means a marathon relay race) for the second consecutive year in November 2023, thanks to the support of the local community. We will continue to engage in frontline activities in both athletics and community coexistence in the future.

Furthermore, we have acquired naming rights for a public sports facility with strong ties to our track and field club in 2023. The facility is called "Krosaki Harima Track and Field Stadium in HONJO." By cooperating in the operation of this facility, we will also contribute to the promotion of the health of the local community.


Running clinic in the Kitakyushu City

Signboard unveiling
Director, Citizen Services, Culture and Sports Bureau, City of Kitakyushu, Yasuyuki Inoue (right)
Director, Managing Corporate Officer of the Company, Masafumi Takeshita (left)

Directors

Kazuhiro Egawa
Representative Director, President

Attendance rate of Board of Directors: 13/13 meetings attended

Takeshi Yoshida
Director, Managing Corporate Officer of Sustainability Promotion, Ceramics Business Unit, Purchasing, Accounting & Finance and Corporate Planning

Attendance rate of Board of Directors: 13/13 meetings attended

Junpei Konishi
Director, Managing Corporate Officer of Refractories Manufacturing Business Unit, Coke Oven business in general, Research & Development Unit, Technical Management and Quality Assurance

Attendance rate of Board of Directors: 13/13 meetings attended

Masafumi Takeshita
Director, Managing Corporate Officer of Refractories Domestic Sales Unit, General Administration, Digital Innovation, Human Resources and Risk Management

Attendance rate of Board of Directors: 10/10 meetings attended (Since taking office June 29, 2022)

Hisatake Okumura
Director, Managing Corporate Officer of Refractories Overseas Business Unit, commissioned as Senior General Manager of Global Business Division

Attendance rate of Board of Directors: 10/10 meetings attended (Since taking office June 29, 2022)

Yoshiyuki Fukuda
Director, Managing Corporate Officer of Carbon Neutrality Promotion, Furnace Business Unit, Human & Plant safety, Health, Environment and Accident Prevention, commissioned as Senior General Manager of Furnace Division, cooperating with Managing Corporate Officer Mr. Konishi on Coke Oven business in general

Attendance rate of Board of Directors: Newly appointed
(Significant concurrent positions)
Representative Director, President of KROHARI CHIKURO CORPORATION

Matsuji Nishimura
Director Outside/independent

Attendance rate of Board of Directors: 13/13 meetings attended
(Significant concurrent positions)
Advisor, Kyudenko Corporation

Yukinori Michinaga
Director Outside/independent

Attendance rate of Board of Directors: 13/13 meetings attended
Representative Director and President, President and Executive Officer, SAIBU GAS HOLDINGS CO., LTD.
Representative Director and President, President and Executive Officer, Saibu Gas Co., Ltd.
Outside Director and Audit & Supervisory Board Member, Kyudenko Corporation

Masako Narita
Director Outside/independent

Attendance rate of Board of Directors: 10/10 meetings attended (Since taking office June 29, 2022)

Corporate Auditors

Masaya Honda
Full-time Corporate Auditor

Attendance rate of Board of Directors: 13/13 meetings attended
Attendance rate of Board of Corporate Auditors: 10/10 meetings attended
(Since taking office June 29, 2022)

Takaki Goto
Corporate Auditor

Attendance rate of Board of Directors: 10/10 meetings attended
(Since taking office June 29, 2022)
Attendance rate of Board of Corporate Auditors: 10/10 meetings attended
(Since taking office June 29, 2022)
(Significant concurrent positions)
General Manager, Group Companies Planning Division of Nippon Steel Corporation
Corporate Auditor of OSAKA STEEL CO., LTD.

Morio Matsunaga
Corporate Auditor Outside/independent

Attendance rate of Board of Directors: 13/13 meetings attended
Attendance rate of Board of Corporate Auditors: 12/12 meetings attended
(Significant concurrent positions)
President of Kitakyushu Foundation for the Advancement of Industry, Science and Technology
Outside Director of MITSUI MINING & SMELTING CO., LTD.

Sunao Okaku
Corporate Auditor Outside/independent

Attendance rate of Board of Directors: Newly appointed
Attendance rate of Board of Corporate Auditors: Newly appointed
(Significant concurrent positions)
Executive Managing Corporate Officer, Nishi-Nippon Railroad Co., Ltd.

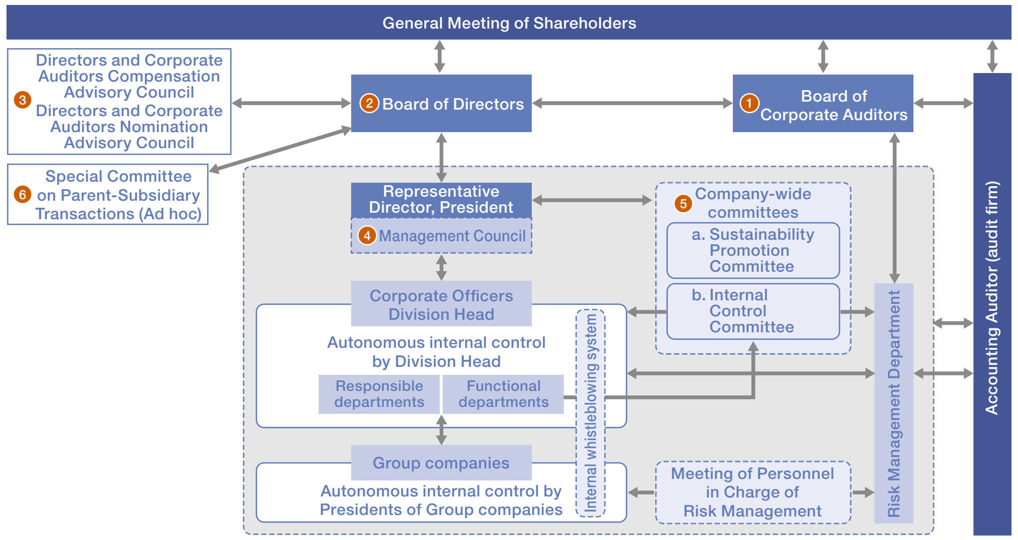
Directors Skills Matrix

	Knowledge and experience regarding management	Knowledge and experience regarding customer industries	Internationality	Sales and Marketing	Manufacturing, Technology and R&D	Accounting and Finance	Legal affairs and Risk Management	HR and Talent Development	Sustainability	Digital transformation
Kazuhiro Egawa	●	●	●	●			●	●	●	●
Takeshi Yoshida	●	●				●	●	●	●	
Junpei Konishi	●	●	●		●				●	
Masafumi Takeshita	●	●		●				●	●	●
Hisatake Okumura	●		●	●	●					
Yoshiyuki Fukuda	●	●			●				●	
Matsuji Nishimura	●			●	●				●	●
Yukinori Michinaga	●							●	●	●
Masako Narita	●		●			●			●	

Basic views on Corporate Governance

Our corporate governance is based on securing management transparency and efficiency to all the stakeholders.

We developed the “Mission Statement,” which lays down “Mission,” “Business Goal” and “Management Policy” of the Group. We are determined to work to strengthen our corporate value by following the guidelines stipulated in the “Mission Statement.”



Corporate Governance System Overview

❶ Board of Corporate Auditors

We have adopted a Corporate Auditor System and a Board of Corporate Auditors System. Our Board of Corporate Auditors has four members: one Full-time Corporate Auditors and three Part-time Corporate Auditors (two of whom are Outside Corporate Auditors). These Part-time Auditors attend meetings of the Board of Directors and the Board of Corporate Auditors and offer comments and opinions from objective points of view regarding important group decisions.

❷ Board of Directors

Our Board of Directors has nine members: six internal Directors and three independent Outside Directors (one of whom is a female). These Outside Directors attend the Board of Directors’ meeting and offer comments and opinions from objective points of view regarding important group decisions. The Board of Directors makes decisions on business execution and supervises the execution of duties by directors.

The Company adopts a corporate officer system, which aims to clearly separate the management decision-making and supervisory functions from the business execution function. This system enhances the decision-making and supervisory functions of the Board of Directors, while accelerating and streamlining business execution.

We believe that these systems fully demonstrate external checks and balances functions while also securing sufficient supervision of the Board of Directors.

❸ Directors and Corporate Auditors Compensation Advisory Council and Directors and Corporate Auditors Nomination Advisory Council

In order to reinforce the independence, objectivity and accountability of the Board of Directors with respect to the compensation and appointment of directors and auditors, non-statutory advisory committees (Directors and Corporate Auditors Compensation Advisory Council and Directors and Corporate Auditors Appointment Advisory Council) have been established. The councils above are held once a year in principle and / or when needed, and are chaired by Representative Director, President and consist of three independent outside directors appointed by Representative Director, President.

The Directors and Corporate Auditors Compensation Advisory Council advises the Board of Directors on matters concerning Directors and Corporate Auditors compensation, while the Directors and Corporate Auditors Appointment Advisory Council deliberates and advises the Board of Directors on the appointment of candidates for directors and corporate auditors and the development of candidates for successors to Representative Director, President and other directors.

❹ Management Council

To deliberate and report on basic Management Policy and important business execution matters, the Management Council is established as an advisory body for Representative Director, President. Management Council meetings are held regularly (twice a month in principle) or when required. Chaired by Representative Director, President, the Management Council consists of full-time Directors and others appointed by Representative Director, President. Full-time corporate auditors may attend the meeting to express their opinions. Items requiring decisions on the agenda of the Management Council shall be deliberated on by the Council and then decided by Representative Director, President, while items subject to resolution by the Board of Directors shall be resolved separately by the Board of Directors.

Items not subject to resolution by the Board of Directors shall be processed pursuant to the internal regulations governing decision-making. Items on the agenda for deliberation or reporting at the Management Council that are subject to reporting to the Board of Directors shall be reported to the Board of Directors separately.

❺ Company-wide committees

The Company has established company-wide committees as bodies to complement regular bodies and to report to the Board of Directors or Representative Director, President on specialized investigation, consideration, and deliberation on company-wide and regular matters that are especially important across departments. The following two company-wide committees are chaired by Representative Director, President.

a. Sustainability Promotion Committee

From the perspective of improving corporate value over the medium- to long-term, the committee deliberates and reports on the formulation of policies and action plans regarding the Company’s sustainability issues and initiatives, progress management, roll over, and other matters.

b. Internal Control Committee

This committee deliberates on the basic policies and action plans of the Group’s internal control system and reports on the status of development and operation of the internal control system. In the event of a crisis, the committee establishes an emergency response headquarters internally to resolve issues in a flexible and cross-departmental manner.

❻ Special Committee on Parent-Subsidiary Transactions

In order to protect minority shareholders’ interests, each time a material transaction or any other action arises with the parent company, the Special Committee on Parent-Subsidiary Transactions, consisting of Representative Director, President and all independent Outside Directors, meets to review and consider details of the transaction and report to the Board of Directors accordingly.

Initiatives to Strengthen Corporate Governance

(i) Analysis and assessment of the effectiveness of the Board of Directors

The Company periodically surveys Directors and Corporate Auditors concerning the effectiveness of the Board of Directors as a whole, including Board operations. Survey results are reported to the Board of Directors annually and used in analysis and assessment concerning its effectiveness by the Board of Directors.

Analysis and assessment of the effectiveness of the Board of Directors in FY2022 was conducted through a self-assessment survey that included 23 questions on subjects such as the composition and operations of the Board of Directors. Analysis and assessment by the Board concluded that the Board was effective as a whole.

We will strive to further improve the functions of the Board of Directors by implementing measures now being prepared for additional improvements on items for which issues were recognized in the self-assessment survey or brought up in discussions.

(ii) Enhancement of opportunities for dialogue between Outside Directors, and internal Directors and Corporate Auditors

In addition to meetings of the Board of Directors and the Board of Corporate Auditors, semiannual exchange of opinions is conducted between internal Directors (the President and the Director responsible for general affairs and human resources) and Outside Directors and Outside Corporate Auditors to solicit a wide range of opinions on management and business execution. Through these opportunities, we receive advice on issues related to business execution reflecting the knowledge and expertise of Outside Directors and Outside Corporate Auditors.

(iii) Establishment and Design of Policies on Directors and Corporate Auditors Compensation

The overview of policies for determining the individual compensation of Directors are as follows.

1) Basic policy

Compensation for directors of the Company consists entirely of monthly cash compensation. This compensation is comprised of basic compensation, as fixed compensation and performance-based compensation to provide incentives for the sustainable growth and enhancement of corporate value of the Group.

Specifically, an index is set up for each position and the amount of basic compensation is calculated based on the index. The amount of compensation for each director is determined by adding performance-based compensation in accordance with company consolidated ordinary profit or loss, within the range approved by a resolution of the General Meeting of Shareholders. However, part-time directors and corporate auditors who are responsible for supervisory functions will receive only basic compensation in consideration of their duties.

2) Determination of the content, amount and calculation method of performance-based compensation

The index related to performance-based compensation is the consolidated ordinary profit and loss for each consolidated accounting year that indicates the performance of the entire company, and the business performance addition rate multiplied by the basic compensation is calculated using the following formula.

Business performance addition rate = Amount of actual consolidated ordinary profit / Amount of targeted consolidated ordinary profit for performance × Constant

3) Determination of individual compensation for each director

Following the establishment of an upper limit on compensation for directors by a resolution of the General Meeting of Shareholders, the specific allocation of compensation for directors is left to the discretion of Representative Director, President (over the evaluation and assessment of each director’s performance) under a resolution of the Board of Directors in accordance with company internal regulations on remuneration for directors.

(iv) Guidelines for protecting the interests of minority shareholders in transactions with controlling shareholders

The Group considers market prices and total costs when dealing with the parent company, presents our desired price, and decides on the price through individual negotiations, taking care not to disadvantage minority shareholders, and handles it appropriately as in general transaction terms. In addition, a Special Committee on Parent-Subsidiary Transactions, consisting of all independent Outside Directors, is established to review and consider each material transaction or other action with the parent company and report the results to the Board of Directors accordingly.

(v) Policies on and verification of strategic shareholdings

From the perspective of building stable, medium-to-long-term business relationships with business partners, facilitating or strengthening the development of cooperative businesses, the Company may acquire and hold such business partners (investee companies)’ shares (strategic stockholdings) when it is judged to contribute to enhancing the Group’s medium-to long-term corporate value. Our policy is to reduce strategic shareholdings that do not conform to these policies.

Individual strategic stockholdings (specific investment shares and deemed held shares that are required to be disclosed in the Annual Securities Report) are evaluated based on the above policies, and their appropriateness is verified at the board of directors meeting held in principle in May each year.

The Board of Directors has verified the strategic stockholdings held at the end of fiscal year 2022, and it has been determined to “not hold” and to discontinue holding and sell some shares where the purpose of holding has become weak.

Compliance and Risk Management System

We have established an Internal Control Committee, chaired by the President, in accordance with "the Basic Policies of the Internal Control System" resolved by the Board of Directors. We have also established the Risk Management Department as an organization responsible for planning and support of internal controls and for internal auditing, and we have established functional organizations in charge of specialized risk management in each field. Furthermore, Personnel in Charge of Risk Management are assigned responsibility for planning and promoting autonomous internal controls activities by individual sections at each organization and Group company.
Under this structure, the internal control system operates as reviewed below.

Internal Controls Activity Plans

Every February, we formulate an internal controls activity plan for the next fiscal year, covering the entire Group. This plan reflects developments such as amendments to laws and regulations and changing business environments. This internal controls activity plan includes activity policies, activity plans by function (e.g., safety, quality), inspection and audit plans, and plans for education and raising awareness. Based on this plan, each organization and group company formulates its own internal controls activity plan reflecting the properties of its own businesses and its own inherent risks.

Autonomous Internal Control Activities

Each organization and group company carries out autonomous internal control activities based on its own internal controls activity plan. Specifically, each organization and group company conducts comprehensive inspection based on internal controls checklists and autonomous inspection of risks included in its business processes, plans and implements business improvements based on the results of these inspections, reflects these improvements in its business rules and manuals, and educates employees about them. Each functional department provides support for these autonomous internal control activities.

In the event of an accident or similar incident or a real or potential violation of laws, regulations, or rules, the organization or group company affected immediately reports the matter to the Risk Management Department and functional departments in charge and cooperates with related sections on corrective and preventive measures. Information on such cases is shared within the Group, and each organization and group company inspects similar risks.

Internal Audits etc.

Internal audits are conducted through documentary checking using materials such as internal controls checklists and autonomous inspection sheets and through monitoring of each organization and group company by the Risk Management Department and functional departments.

We also have established and operate internal whistleblowing hotlines and conduct periodic employee awareness surveys, as measures intended to supplement internal controls. The status of these efforts and their findings are reported to the Board of Directors, and results of employee awareness surveys are published in internal bulletins and elsewhere. We also hold meetings for dialogue on these results between superiors and subordinates, to contribute to workplace environmental improvements.

Assessment and Improvement

The Risk Management Department reports on the state of operation of the internal controls system in semiannual meetings of the Internal Control Committee and to the Management Council and Board of Directors. It also shares this information with individual organizations and group companies through business liaison meetings held at appropriate timing and through semiannual Meetings of Personnel in Charge of Risk Management from group companies.

Based on the state of implementing internal control activities and the results of internal audits, it also summarizes and reports to the Management Council and Board of Directors the results of assessing the effectiveness of the internal controls system at the end of each fiscal year.

In consideration of the results of this assessment process, it proposes improvements to help make the internal controls system more effective and reflects these in internal controls activity plans for the next fiscal year.

Education and Awareness

Education and training for individual levels of the organization include courses on internal controls and specialized courses for functional departments, to educate executives and employees concerning internal controls.

We also strive to raise awareness of internal controls through various opportunities and systems. Examples include compliance lectures by members of management, dialogue with individual organizations and group companies during monitoring activities, sharing of information on accidents and other incidents, and distribution of email newsletters on compliance.

Cooperation with Corporate Auditors and the Accounting Auditor

Full-time Corporate Auditors attend all meetings of the Internal Control Committee. Full-time Auditors also meet regularly with the Risk Management Department in liaison meetings to share information on the internal controls system, and quarterly liaison meetings are held among all Corporate Auditors and Outside Directors and the Risk Management Department. (The Accounting Auditor attends one of these quarterly liaison meetings.) The Accounting Auditor and the Risk Management Department regularly exchange reports and opinions on subjects including the state of internal controls and the results of assessment of internal controls related to financial reporting.

We strive to establish dual reporting lines through these activities.

Formulation of Business Continuity Planning

To secure the lives of employees and fulfill our supply responsibilities to customers, we have formulated a manual on responding to major earthquakes and conduct disaster prevention drills in order to be ready for major earthquakes and tsunamis. We also have adopted a system for confirming the safety of personnel and keep emergency food supplies at all sites.

Measures to ensure business continuity in light of tsunami risk include identifying the expected timing and maximum heights of tsunamis at all facilities and establishing evacuation methods for each facility.

Currently we are formulating business continuity plans at major business units for disasters other than major earthquakes and tsunamis as well.

Compliance (Education and Awareness)

We recognize safety and compliance as the most important foundations for corporate survival. Accordingly, we provide regular compliance training for individual levels in the organization and raise awareness through internal bulletins and email newsletters. We also make certain to set aside time for lectures on compliance during annual management patrol visits by the President and other members of management to all plants in Japan. We strive to ensure that a thorough understanding of compliance is established firmly throughout the organization, through direct communication, in their own words, by members of management to employees.

Maintenance and Operation of the Internal Whistleblowing System

The Company has established and operates an internal whistleblowing system (conforming to the amended Whistleblower Protection Act that took effect in June 2022), through which employees and others who have become aware of actual or suspected violations of laws or regulations or other improper acts in the Group are able to report them safely and with peace of mind. In operating this system, we provide periodic introductions to the system in internal bulletins as well as posting information about the system and its contact points on bulletin boards and the intranet. These efforts seek to ensure that all employees are aware of the system and how to contact it, so that it can achieve its intended aims. The Group's annual employee awareness surveys also contain questions about this system, to gauge awareness of the system and perceptions of its usability and trustworthiness by collecting answers from a wide range of employees. We use the results of these surveys to make continuous operational improvements.

Implementation of Disaster Prevention drills

Annual evacuation drills in March are based on the manual for responding to a major earthquake and the fire-prevention plan prepared by each business site. At the same time, we make company-wide efforts to secure the lives of employees in a disaster, through drills on confirming the safety of personnel, assessment of drills by each site, and checking of inventories and best-by dates of emergency supplies.

For evacuation drills, we prepare plans reflecting the level of earthquake resistance of each workplace and practice dispersed evacuation to enable swift and safe evacuation. The responsible secretariat holds a feedback meeting after each drill to maintain and improve drill levels.

In addition, on September 1 of each year we conduct communication drills between the Head Office task force and each business site, to further enhance disaster preparedness.

Fundamental earnings structure and proactive growth investment

Our company, which is a leading Japanese refractories company with over 100 years of history, has actively promoted overseas expansion while pursuing business selection and concentration in recent years, and has grown into a global company. In the fiscal year ending March 2023, our oversea business accounts for approximately 45% of consolidated net sales. While we have actively promoted overseas expansion and expanded the Ceramics Business, we have implemented a considerable amount of investment. However, we have steadily obtained returns that are commensurate with this, and as a result, our D/E ratio is maintained at around 0.5 times, indicating an appropriate level of financial soundness.

We conduct business primarily in the three segments of the Refractories, Furnace, and Ceramics. Our mainstay Refractories Business accounts for approximately 85% of consolidated net sales. Our main customers are steel manufacturers worldwide, including Japan. As part of our future business expansion, we are considering regions that demonstrate sustained economic growth and increasing steel production with a focus on India, as well as regions such as Europe and the Americas where there is significant demand for our technology and we can expect expansion of our market share. Therefore, as it is necessary to continue to proactively invest in the overseas business, especially the rapidly growing Indian market, we will continue to make growth investments while carefully assessing returns and ensuring stable fundraising. In addition to the Refractories Business, we will continue to timely invest in the growth areas of the Ceramics Business where demand is expected to increase in the future, including products related to semiconductor manufacturing equipment, insulation products for household fuel cells "ENE-FARM," and products for ceramic capacitor manufacturing. Furthermore, we will continue to focus on strengthening our business foundations and investing in labor saving measures for future growth.

Due to implementation of various measures based on the Management Policy described above, the performance of our group has been progressing smoothly, and in July 2023, we revised upward the quantitative targets and growth investments for the five-year management plan "2025 Management Plan" starting from the fiscal year ending March 2022. We will continue proactive investments while carefully evaluating the return on investment in line with the Revised Management Plan.

In order to improve capital efficiency and corporate value

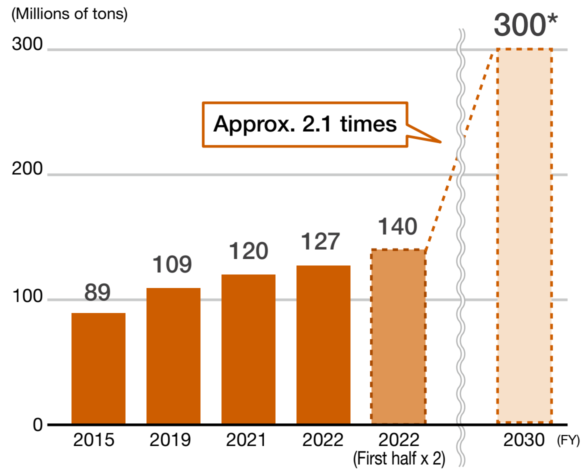
Under the aforementioned business environment, we will proceed with management that is more conscious of capital costs than ever before and strengthen it. Specifically, in the Revised Management Plan, we have set the achievement of a 9% ROIC as a quantitative target.

While we have made decisions on individual CAPEX projects while being conscious of the return on invested capital, we have set a new target for ROIC as a group-wide indicator. We will continue to carefully select efficient investment projects and strive to improve corporate value. Additionally, by expanding the target of 9% ROIC to each business division, we will aim to establish a mechanism that incentivizes achievement of the target.

As for the return to shareholders, we will continue to maintain a basic policy of a consolidated dividend payout ratio of around 30%. In terms of fundraising, we will choose the most suitable means according to its purpose of fundraising and the financial position and strategies at that time, including direct finance, indirect finance, and asset sales, based on our strategic context of investments in growth areas such as overseas businesses including India and ceramics. In terms of the business portfolio, considering the current situation where the proportion of the Refractories Business is so high that changes in the business environment of the steel industry are significant, it is necessary to further expand the Refractories Business for non-ferrous and cement industries, which is the mainstay product of our group companies in Europe, the Ceramics Business, which is expected to further growth in the future, and the Furnace Business, which can expect stable orders, in order to achieve our group business structure that is more resilient.

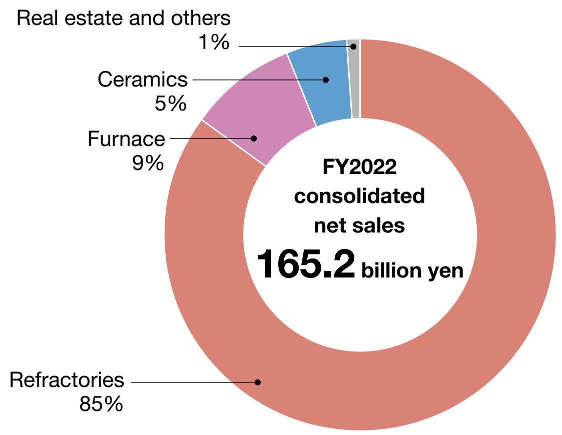
In terms of market evaluation, PBR has recently been approximately 1. As part of our ongoing efforts to further improve PBR, we believe it is extremely important for us to clearly explain our long-term growth strategy to our stakeholders for their better understanding of how our group is growing and creating value, and to steadily implement it. As part of this, we consider proactive dialogue with investors to be an important opportunity for us and will continue to strengthen our IR function by considering and implementing various measures to contribute to its enhancement.

Indian market crude steel production (actual and projected)



* Indian government's crude steel production target for 2030

Sales breakdown by segment



Summary of Major Consolidated Financial Results for 11 Years

Billions of yen

	FY2012	FY2013	FY2014	FY2015	FY2016	FY2017	FY2018	FY2019	FY2020	FY2021	FY2022
Business results											
Net sales	97.34	101.01	110.43	115.12	108.37	123.98	142.35	137.40	113.66	133.78	**165.20**
Operating profit	2.36	2.87	3.84	5.84	7.67	8.49	10.54	9.39	4.95	7.57	**11.17**
Ordinary profit	2.43	3.06	3.75	5.77	7.84	8.99	11.29	9.76	6.36	8.68	**12.08**
Net Profit	1.37	1.97	1.60	3.68	4.43	5.66	7.87	6.44	4.33	5.49	**8.28**
Financial position											
Total assets	97.92	99.89	103.05	102.01	116.70	131.03	135.42	126.94	130.35	142.69	**163.34**
Total net assets	38.67	41.74	45.98	44.97	50.78	57.76	56.24	57.23	63.29	69.08	**77.86**
Balance of interest-bearing debt	28.24	26.88	26.03	25.99	33.22	35.23	35.95	34.72	32.78	34.20	**39.38**
KPIs											
Return on sales (ROS)	2.5%	3.0%	3.4%	5.0%	7.2%	7.3%	7.9%	7.1%	5.6%	6.5%	**7.3%**
Return on invested capital (ROIC)	3.4%	3.8%	5.0%	6.3%	7.6%	7.7%	8.6%	8.2%	4.9%	6.3%	**8.5%**
Return on equity (ROE)	4.1%	5.4%	4.0%	8.9%	10.1%	11.3%	14.8%	12.0%	7.6%	8.8%	**11.9%**
Debt/equity ratio (D/E Ratio)	0.80	0.71	0.62	0.63	0.72	0.66	0.68	0.64	0.55	0.52	**0.54**
Per-share information*											
Basic earnings per share (Yen)	16	23	19	44	52	671	934	765	515	652	**983**
Net assets per share (Yen)	416	450	494	486	551	6,322	6,298	6,437	7,134	7,759	**8,732**
Dividends per share (Yen)	3.5	5.0	5.0	10.0	13.0	125.0	280.0	220.0	150.0	200.0	**290.0**
Capital investment											
Capital investment	4.35	2.34	1.26	2.50	1.80	3.04	6.38	7.14	4.72	3.47	**6.07**
Depreciation	3.65	3.61	3.36	2.83	2.76	2.68	2.73	3.16	2.81	3.25	**3.49**
Cash flows											
Net cash provided by (used in) operating activities	3.89	4.98	3.82	2.30	(2.79)	2.69	10.27	9.07	10.08	4.12	**1.00**
Net cash provided by (used in) investing activities	(3.73)	(1.93)	(1.79)	(2.30)	(2.18)	(2.37)	(2.27)	(7.04)	(4.95)	(3.61)	**(4.51)**
Net cash provided by (used in) financing activities	(0.14)	(2.60)	(2.61)	(0.19)	4.96	0.74	(6.72)	(3.48)	(3.61)	(1.02)	**2.86**
Other figures											
Number of employees (Persons)	4,174	4,077	4,036	4,159	4,365	4,439	4,735	4,827	4,802	4,681	**4,770**

* 10 shares of the Company's common shares were consolidated into one share as of October 1, 2017.

Major Group Companies and Business Branches

Location of domestic business branches

Branch name	Postal code	Address
Head Office		
Head Office	806-8586	1-1 Higashihamamachi, Yahatanishi-ku, Kitakyushu, Fukuoka
The Refractories Business		
Muroran Office	050-0084	1F, Wanishi Multipurpose Center, Muroran Works, Nippon Steel Corporation, 13-1 Miyukicho 2-chome, Muroran, Hokkaido
East Japan Branch	299-1141	Kimitsu Area, East Nippon Works, Nippon Steel Corporation, 1 Kimitsu, Kimitsu, Chiba
Kashima Office	314-0014	Kashima Area, East Nippon Works, Nippon Steel Corporation, 3 Oaza-Hikari, Kashima, Ibaraki
Kimitsu Office	299-1141	Kimitsu Area, East Nippon Works, Nippon Steel Corporation, 1 Kimitsu, Kimitsu, Chiba
Tokyo Branch	103-0026	8F, Seifun Kaikan Bldg., 15-6 Nihonbashi Kabutocho, Chuo-ku, Tokyo
Chiba Office	260-0826	1 Nihamacho, Chuo-ku, Chiba, Chiba
Nagoya Branch	476-0015	Nagoya Works, Nippon Steel Corporation, 5-3 Tokaimachi, Tokai, Aichi
Tokai Office	476-0015	2-13-13 Tokaimachi, Tokai, Aichi
Kansai and Setouchi Branch	640-8404	Wakayama Area, Kansai Works, Nippon Steel Corporation, 1850 Minato, Wakayama, Wakayama
Wakayama Office	640-8404	Wakayama Area, Kansai Works, Nippon Steel Corporation, 1850 Minato, Wakayama, Wakayama
Setouchi Office	671-1180	4F, NB Hirohata Bldg., 4-9-6 Seimondori, Hirohata-ku, Himeji, Hyogo
Osaka Office	550-0004	11F, Shinanobashi Mitsui Bldg., 1-11-7 Utsubohonmachi, Nishi-ku, Osaka, Osaka
Kurashiki and Fukuyama Office (Kurashiki)	712-8074	111 JFE Logistics Bldg., 1-1 Mizushimakawasakidori, Kurashiki, Okayama
Kurashiki and Fukuyama Office (Fukuyama)	721-0931	4F, Annex, Management Center, West Japan Works JFE Steel Corporation, 1 Kokancho, Fukuyama, Hiroshima
Kyushu Branch	804-0001	Yahata Area, Kyushu Works, Nippon Steel Corporation, 1-1 Tobihatacho, Tobata-ku, Kitakyushu, Fukuoka
Yahata Office	804-0001	Yahata Area, Kyushu Works, Nippon Steel Corporation, 1-1 Tobihatacho, Tobata-ku, Kitakyushu, Fukuoka
Oita Office	870-0992	Oita Area, Kyushu Works, Nippon Steel Corporation, 1 Oaza-Nishinosu, Oita, Oita
Yamaguchi Office	744-0015	2F, TT Shoji Bldg., 2-5-18 Otemachi, Kudamatsu, Yamaguchi
Plants		
Yahata Plant	806-8586	1-1 Higashihamamachi, Yahatanishi-ku, Kitakyushu, Fukuoka
Chiba Plant	260-0826	1 Nihamacho, Chuo-ku, Chiba, Chiba
Ako Plant	678-0256	1061 Tenwa, Ako, Hyogo
Bizen Plant	705-0002	1175 Urainbe, Bizen, Okayama
Kashima Plant	314-0051	Kashima Area, East Nippon Works, Nippon Steel Corporation, 1-1 Hikari, Kamisu, Ibaraki
Oita Taphole Clay Plant	870-0992	Oita Area, Kyushu Works, Nippon Steel Corporation, 1 Oaza-Nishinosu, Oita, Oita
Takasago Monolithic Plant	676-8513	1-3-1 Shinhama, Araicho, Takasago, Hyogo
Nagoya Taphole Clay Plant	476-0015	Nagoya Works, Nippon Steel Corporation, 5-3 Tokaimachi, Tokai, Aichi
Kisarazu Monolithic Plant	292-0835	7-1 Tsukiji, Kisarazu, Chiba
Muroran Lime Plant	050-0084	1F, Wanishi Multipurpose Center, Muroran Works, Nippon Steel Corporation, 13-1 Miyukicho 2-chome, Muroran, Hokkaido
Furnace Business		
Furnace Division	806-8586	1-1 Higashihamamachi, Yahatanishi-ku, Kitakyushu, Fukuoka
Tokyo Branch	103-0026	8F, Seifun Kaikan Bldg., 15-6 Nihonbashi Kabutocho, Chuo-ku, Tokyo
East Japan Branch	299-1141	Kimitsu Area, East Nippon Works, Nippon Steel Corporation, 1 Kimitsu, Kimitsu, Chiba
Nagoya Branch	476-0015	Nagoya Works, Nippon Steel Corporation, 5-3 Tokaimachi, Tokai, Aichi

Branch name		Postal code	Address
Yahata Branch		804-0001	Yahata Area, Kyushu Works, Nippon Steel Corporation, 1-1 Tobihatacho, Tobata-ku, Kitakyushu, Fukuoka
Sanyou Branch		743-0063	Hikari Area, Yamaguchi Works, Nippon Steel Stainless Steel Corporation, 3434 Oaza-Shimada, Hikari, Yamaguchi
Kanda Branch		800-0301	12 Matsubaracho, Kandamachi, Miyako-gun, Fukuoka
Ceramics Business			
Ceramics Division	Fine Ceramics Department Thermal Ceramics Department	806-8586	1-1 Higashihamamachi, Yahatanishi-ku, Kitakyushu, Fukuoka
Thermal Ceramics Department (Takasago)		676-8513	1-3-1 Shinhama, Araicho, Takasago, Hyogo
Omuta Manufacturing Group, Fine Ceramics Department Omuta Manufacturing Group, Thermal Ceramics Department		836-0062	1-21-1 Nishiminato-machi, Omuta, Fukuoka
Electronics Firing Ceramics Department		705-0002	1175 Urainbe, Bizen, Okayama
Ceramics Sales Department	East Japan Sales Group	103-0026	8F, Seifun Kaikan Bldg., 15-6 Nihonbashi Kabutocho, Chuo-ku, Tokyo
	West Japan Sales Group Osaka	550-0004	11F, Shinanobashi Mitsui Bldg., 1-11-7 Utsubohonmachi, Nishi-ku, Osaka, Osaka
	West Japan Sales Group Bizen	705-0002	1175 Urainbe, Bizen, Okayama
	West Japan Sales Group Kyushu	806-8586	1-1 Higashihamamachi, Yahatanishi-ku, Kitakyushu, Fukuoka
	International Sales Group	806-8586	1-1 Higashihamamachi, Yahatanishi-ku, Kitakyushu, Fukuoka
Group Companies			
SN Refracture Tokai Co., Ltd.		448-0813	1 Minami-Fuji, Ogakie-cho, Kariya, Aichi
KROHARI CHIKURO CORPORATION		806-8586	Administrative Center, Krosaki Harima Corporation, 1-1 Higashihamamachi, Yahatanishi-ku, Kitakyushu, Fukuoka
Shin-Nippon Thermal Ceramics Corporation		590-0985	12F, Portus Center Bldg., 4-45-1 Ebisujimacho, Sakai-ku, Sakai City, Osaka

As of April 1, 2023

Overseas Locations

Country	Branch/Group Companies	Address
Taiwan	Krosaki Harima Corporation Taiwan Office	10F-6, No. 206, Guanghua 1st Rd, Lingya District, Kaohsiung, Taiwan Republic of China
Spain	Krosaki Amr Refractarios, S. A.	Poligono Ibaiondo 31, 20120 Hernani Guipuzkoa Spain
Spain	Refractaria, S.A.	Buenavista, 13, 33187 Siero Asturias, SPAIN
Spain	Refractaria Technologies, S.L.	
The Netherlands	Krosakiharima Europe B.V.	Rooswijkweg 84, 1951 MJ Velsen-noord The Netherlands
US	Krosaki USA Inc.	519W. 84th Drive Merrillville, IN 46410, USA
India	TRL KROSAKI REFRACTORIES LIMITED	[Registered Office] Belpahar, Dist - Jharsuguda, Odisha, India, Pin - 768218 [Sales & Marketing Head Office] Rudramani Building, 12th & 13th Floor 1720 Eastern Metropolitan Bypass, Kolkata - 700 039, India
China	Krosaki Harima (Shanghai) Enterprise Management Co., Ltd.	Room 3204, New Town Center, No. 83 Lou Shan Guan Road, Changning District, Shanghai, China
China	Wuxi Krosaki Sujia Refractories Co., Ltd.	Qianqiao Town, Wuxi City, Jiangsu Province, China
China	Wuxi Krosaki Machinery Co., Ltd.	Qianqiao Town, Wuxi City, Jiangsu Province, China
China	TRL KROSAKI CHINA LIMITED	Metallurgical and Chemical industrial Park Bayuquan, Yingkou, Liaoning Province, China
China	YINGKOU KROSAKIHARIMA REFRACTORIES CO., LTD.	Jinlong Industrial Park Dashiqiao City, Liaoning P.R. China

As of April 1, 2023

Company Information

Company Overview (As of March 31, 2023)

Company Name	KROSAKI HARIMA CORPORATION
Capital	5,537,960,000 yen

Number of employees	Nonconsolidated 2,402; consolidated 4,770
Founding	October 14, 1918
Establishment	June 1, 1919

Major customers

Nippon Steel Corporation
JFE Steel Corporation
Kobe Steel, Ltd.
OSAKA STEEL CO., LTD.
Godo Steel, Ltd.
AICHI STEEL CORPORATION
Nippon Yakin Kogyo Co., Ltd.
Topy Industries Ltd.
TOKYO STEEL MANUFACTURING CO., LTD.
Daido Steel Co., Ltd.
Nippon Steel Engineering Co., Ltd.
Nippon Steel Chemical & Material Co., Ltd.
Mitsubishi UBE Cement Corporation
Tata Steel Limited
ArcelorMittal
JSW Steel Limited
Steel Authority of India Limited
Nucor Corporation
China BaoWu Steel Group Corporation Limited
China Steel Corporation Others

Directors, Auditors, Corporate Officers, Fellows (As of June 29, 2023)

Representative Director, President	Kazuhiro Egawa

Directors	Takeshi Yoshida Junpei Konishi Masafumi Takeshita Hisatake Okumura Yoshiyuki Fukuda	Outside Directors	Matsuji Nishimura Yukinori Michinaga Masako Narita

Corporate Auditors	Masaya Honda Takaki Goto	Outside Corporate Auditors	Morio Matsunaga Sunao Okaku

Managing Corporate Officers	Masafumi Takeshita	Refractories Domestic Sales Unit, General Administration, Digital Innovation, Human Resources, Risk Management
	Takeshi Yoshida	Sustainability Promotion, management of Ceramics Unit, Purchasing, Accounting & Finance and Corporate Planning
	Junpei Konishi	Refractories Manufacturing Business Unit, Coke Oven business in general, Research & Development Unit, Technical Management and Quality Assurance
	Hisatake Okumura	Refractories Overseas Business Unit, commissioned as Senior General Manager of Global Business Division
	Yoshiyuki Fukuda	Carbon Neutrality Promotion, Furnace Unit & Human and Plant safety, Health, Environment and Accident Prevention, commissioned as Senior General Manager of Furnace Business Division, cooperating with Managing Corporate Officer Mr. Konishi on the Coke Oven business in general, President of KROHARI CHIKURO CORPORATION
	Naoki Furuta	Commissioned as Senior General Manager, Refractories Manufacturing Division
	Akio Moriya	Commissioned as General Manager, Technological Management Division, commissioned as Senior General Manager, Quality Assurance Division
Corporate Officer	Kohzoh Ohta	Commissioned as General Manager, Nagoya Branch, Sales Division, commissioned as General Manager, Nagoya Branch, Furnace Division
	Takeshi Yabu	Commissioned as General Manager, Kyushu Branch, Sales Division
	Ryusuke Miura	Commissioned as Senior General Manager, Safety, Environment & Disaster Prevention Promotion Division, Acting General Manager, Safety and Health Promotion Department, Safety, Environment & Disaster Prevention Promotion Division, commissioned as Deputy General Manager, Furnace Division
	Hidehiro Yamanaka	Commissioned as Senior General Manager, Ceramics Business Division
	Kenji Tomita	Commissioned as Branch Manager, East Japan Branch, Sales Division, commissioned as General Manager, East Japan Branch, Furnace Division
	Makoto Nakamura	Commissioned as Senior General Manager, Sales Division, commissioned as General Manager, Kansai and Setouchi Branch, Sales Division, Acting District Sales Manager, Setouchi Office, Kansai and Setouchi Branch, Sales Division
	Takashi Matsunaga	Commissioned as Senior General Manager, Monolithic Manufacturing Business Division, Refractories Manufacturing Division
	Yuzou Kawatsu	Commissioned as General Manager, Facility Department, Refractories Manufacturing Division
	Sachihiko Asaya	Commissioned as General Manager, Corporate Planning Department, assistant to Managing Corporate Officer Mr. Yoshida on accounting and finance, assistant to Managing Corporate Officer Mr. Okumura on global business
	Hajime Nishiyama	Commissioned as General Manager, General Administration Department, commissioned as General Manager, Digital Innovation Division, commissioned as General Manager, Risk Management Department
	Kazushi Akagi	Commissioned as General Manager, Iron Making and Construction Refractories Division, Refractories Manufacturing Division, commissioned as Acting General Manager, Iron Making Technologies Department, Iron Making and Construction Refractories Division, Refractories Manufacturing Division
	Kenzo Yamamoto	Commissioned as General Manager, Purchasing Division, acting General Manager, Product Procurement Center, Purchasing Division, acting General Manager, Equipment and Materials Center, Purchasing Division
Fellow (equivalent to Corporate Officer)	Kiyoshi Gotoh	Commissioned as General Manager, Technical Research Institute

Stock Information

Summary of Shares
(As of March 31, 2023)

Total number of shares authorized to be issued	35,000,000 shares
Total number of issued shares	9,114,528 shares (including 693,729 treasury shares) Note: The figure of 693,729 treasury shares includes 100 shares listed in the Company's name on the shareholders' register but not effectively owned by the Company.
Number of shareholders	6,562

Number of shares per unit	100 shares
Fiscal year-end	March 31 each year
Listed on the following exchanges	Prime Market of the Tokyo Stock Exchange The Fukuoka Stock Exchange
Securities code	5352

Major shareholders (top ten) (As of March 31, 2023)

Name	Number of shares held (thousands of shares)	Percentage of shares held (%)
Nippon Steel Corporation	3,908	46.41
The Master Trust Bank of Japan, Ltd. (trust account)	656	7.79
Custody Bank of Japan, Ltd. (trust account)	514	6.11
RE FUND 107-CLIENT AC	200	2.38
Custody Bank of Japan, Ltd. (annuity trust account)	190	2.26
The Bank of Fukuoka	185	2.21
Custody Bank of Japan, Ltd. (trust account 4)	79	0.94
YASKAWA Electric Corporation	70	0.83
JPMorgan Securities Japan Co., Ltd.	65	0.78
DFA INTL SMALL CAP VALUE PORTFOLIO	64	0.76

Notes: 1. Although the Company owns 693,000 shares of treasury stock, it is not included in the major shareholders above.
2. Percentages of shares held are calculated excluding treasury stock.

Distribution of shareholders (As of March 31, 2023)

Trends in share price, trading volume, and dividends

	2014	2015	2016	2017	2018	2019	2020	2021	2022
Closing share price on final trading day (end of December) (yen)	2,480.00	2,790.00	3,070.00	4,735.00	6,630.00	6,420.00	3,945.00	4,415.00	5,060.00
Cumulative trading volume (shares)	6,195,500	5,090,500	4,392,200	9,371,200	13,837,800	10,186,100	7,683,900	5,799,000	3,665,100
Annual dividends per share (yen)	5	10	13	125	280	220	150	200	290

* 10 shares of the Company's common shares were consolidated into one share effective in October 2017. Amounts for share prices and annual dividends for the previous periods are shown assuming that this consolidation took place in each respective period.