



SHINAGAWA

Integrated Report 2022



Promoting Industrial Growth and Achieving a Prosperous Society



Scope of Reporting

Period

Fiscal year ended March 31, 2022
(April 1, 2021 - March 31, 2022)

*Some information from other periods is also reported.

Organization

Shinagawa Refractories Group

* The forward-looking statements in this report are based on judgments and assumptions that the Group considers reasonable at the present time in light of the information available to us at the time of this report.

Therefore, actual results may differ materially from the forecasts stated here due to various important factors, including economic conditions in major domestic and overseas markets and fluctuations in foreign exchange rates.

The Shinagawa Group contributes to promoting industrial growth and achieving a prosperous society through manufacturing and sales of refractories and providing engineering services including furnace designing and construction.

We focus on developing creative and dynamic workforce, establishing superior technological capabilities and a solid financial base with developing high-profit structure to achieve the following goals:

- (1) Maintain our position as one of the world's leading full-service refractory solutions providers
- (2) Closely engage with customers to timely fulfill their exact needs
- (3) Build a high level of trust from shareholders, business partners, local communities, and all our other stakeholders and supporters
- (4) Create an attractive and rewarding work environment for employees

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A leading company in refractories that continues to

1875 **Founded**

Katsuzo Nishimura began manufacturing fire bricks in Shibaura, Tokyo, for the first time as a private business



1894

The Company's first patent is granted for silica fire bricks

1903

Shinagawa Shirorenga Co., Ltd. was established

1914

Tokyo Station opened
All decorative bricks (red bricks) on the building's exterior were supplied by the Company



1949

Listed on the Tokyo Stock Exchange

1950

Entered into a technical alliance with U.S.-based General Refractories to produce a basic brick under RITEX brand

1974

Full-scale production of mold powders launched

1967

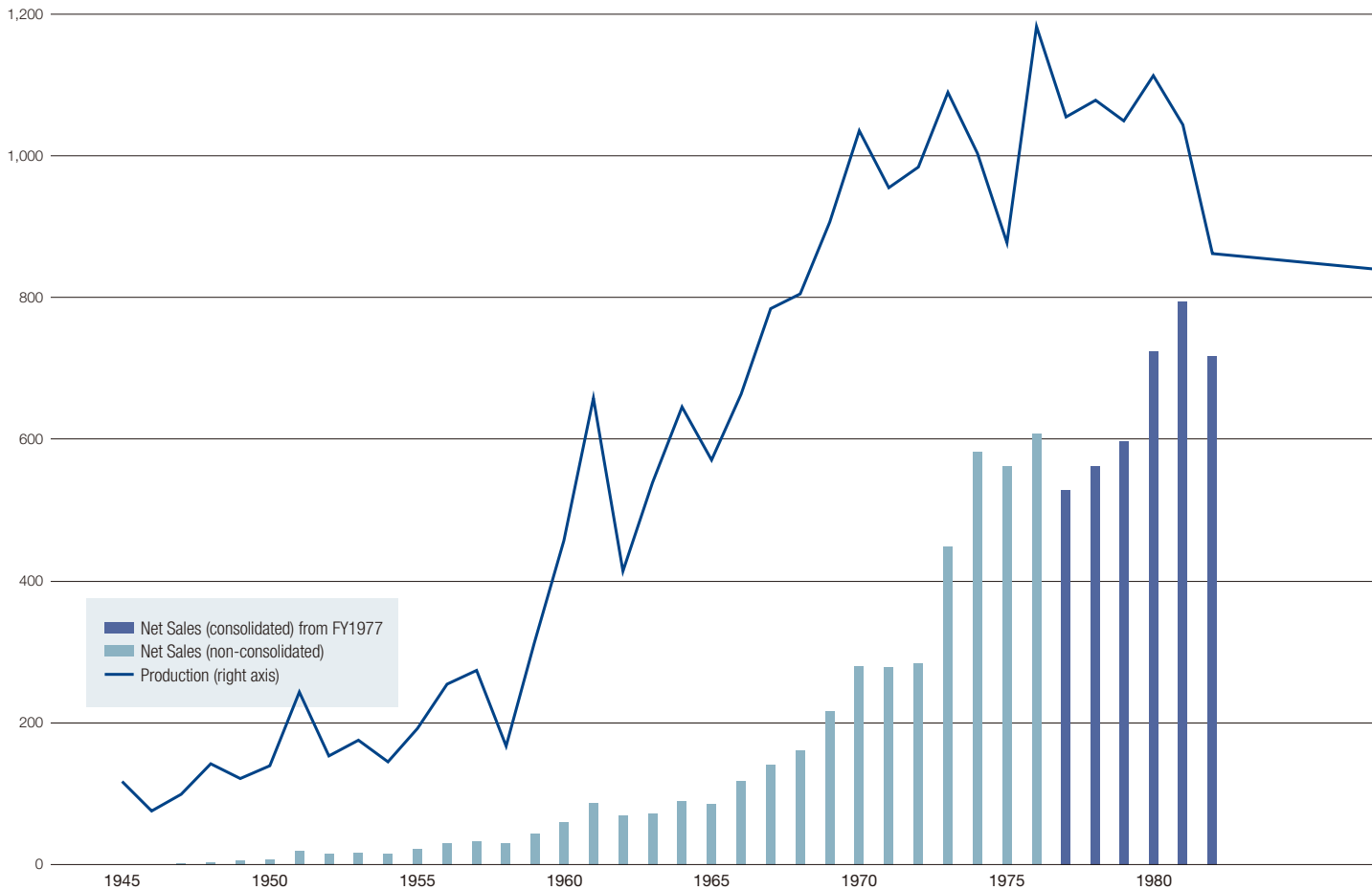
Full-scale production of ceramic fibers launched at Isolite Insulating Products Co., Ltd.

1975

100th anniversary of our founding



Net Sales (100 Million JPY) ■ Production and Net Sales



Key World Affairs and major Events in Customer Industries

1950

Korean War

1964

Tokyo Olympics

1970

Yawata Iron and Steel Co., Ltd. and Fuji Iron and Steel Co., Ltd. merged to establish Nippon Steel Corporation

1971

Nixon Shock

1973

First Oil Shock

1979

Second oil shock

support the development of Japanese industry

1983

Full-scale production of fine ceramics launched

1990

Introduced a 5,000-ton vacuum hydraulic press for the magnesia-carbon brick plant

1995

Automated plant for basic bricks began operation



2009

Merged with JFE Refractories Corporation, named a new company as Shinagawa Refractories Co., Ltd.

2011

Great East Japan Earthquake occurred
The Company sustained significant damage by the earthquake, including at its Yumoto Works in Fukushima Prefecture

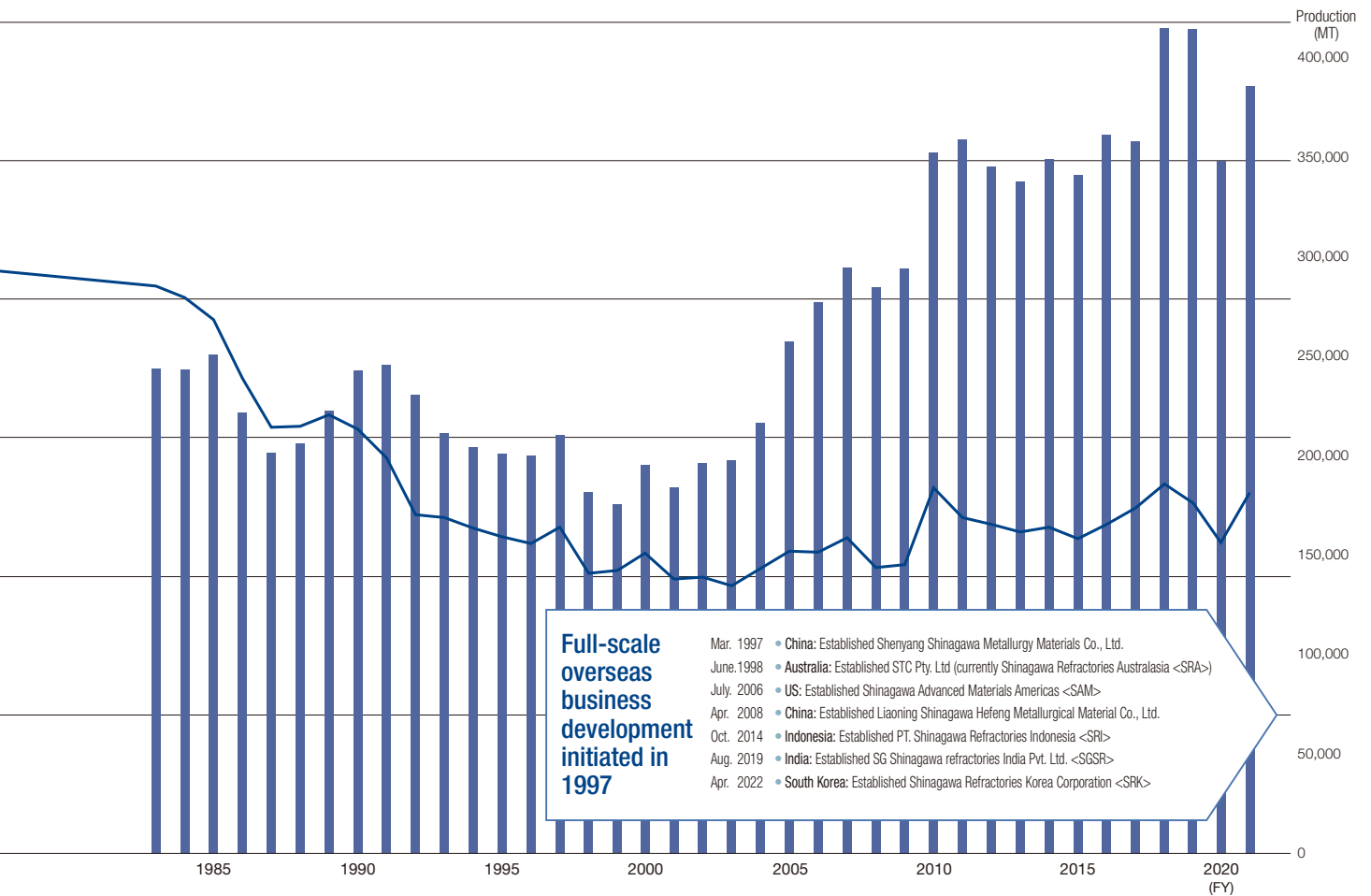


2022

Acquired additional shares of Isolite Insulating Products Co., Ltd., making it a wholly owned subsidiary
Acquired Teikoku Ceramics Co., Ltd. through merger

2016

The Company has adopted a Board of Directors and Audit and Supervisory Committee



1987

Privatization of Japan Nation Railway to establish Japan Railway

1990

Collapse of the Japanese Asset Bubble

1995

Great Hanshin-Awaji Earthquake

2003

NKK Corporation and Kawasaki Steel Corporation integrated to establish JFE Steel Corporation

2007-2008

The Global Financial Crisis

2012

Nippon Steel Corporation and Sumitomo Metal Industries, Ltd. merged to establish Nippon Steel & Sumitomo Metal Corporation, now Nippon Steel Corporation

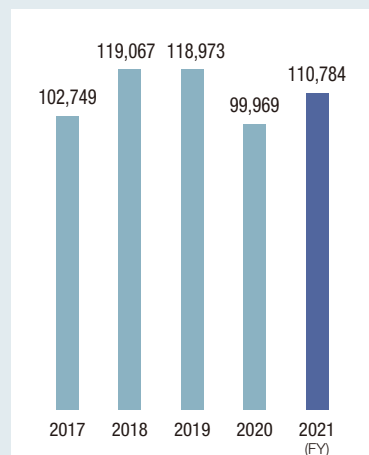
2019

Outbreak of COVID-19

Financial Information

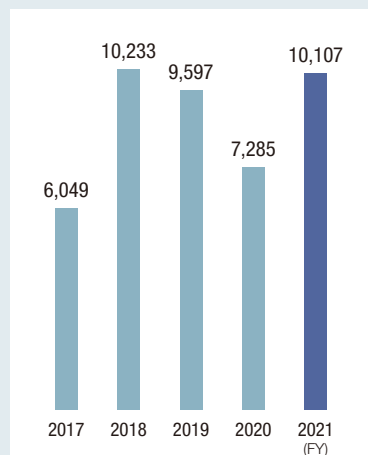
Net Sales

(Millions of JPY)



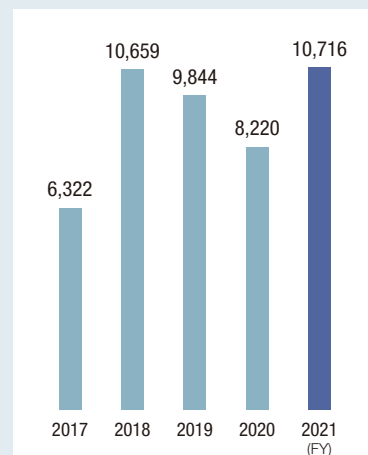
Operating Income

(Millions of JPY)



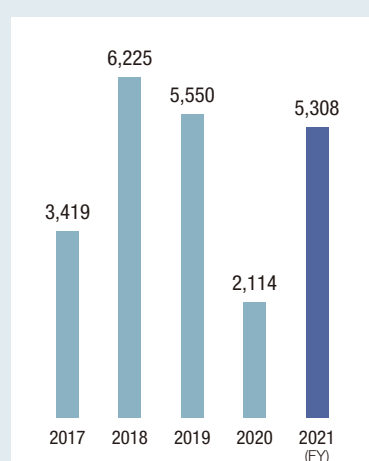
Ordinary Income

(Millions of JPY)



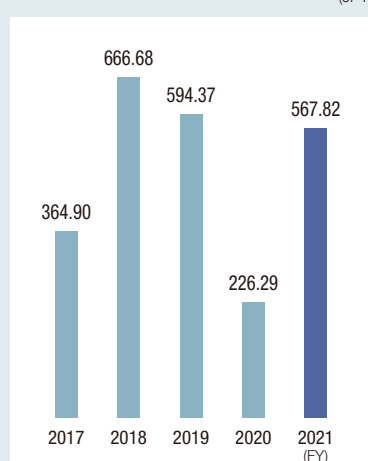
Profit Attributable to Owners of the Parent

(Millions of JPY)



Earnings per Share

(JPY)



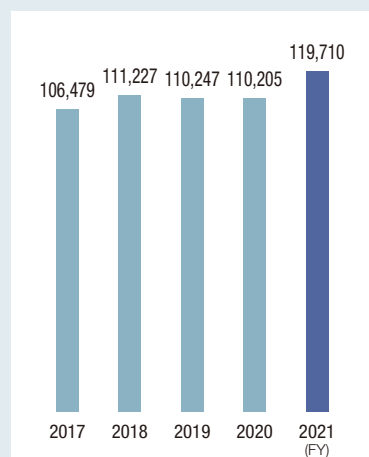
ROS/ROE

(%)



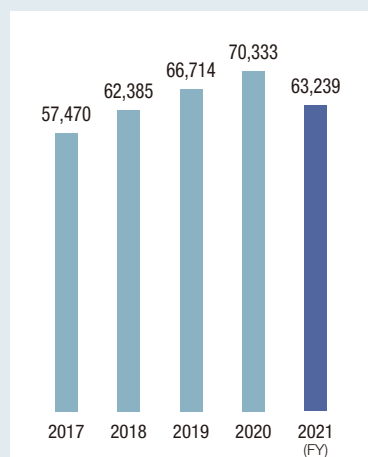
Total Assets

(Millions of JPY)



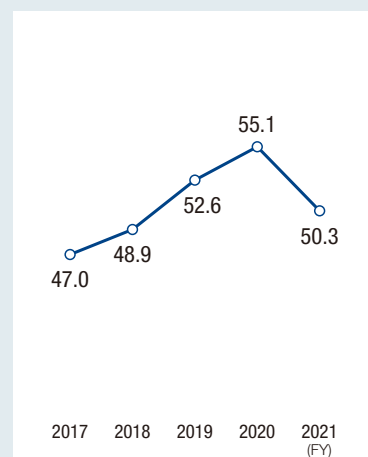
Net Assets

(Millions of JPY)



Equity Ratio

(%)



Non-Financial Information

Foundations of Trust

147 years of business
(Founded in 1875)



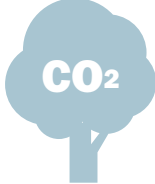
Shinagawa Global Group

21 Companies
2,982 Employees
(Numbers of Group Companies: 7 in Japan, 14 Overseas)



CO₂ emissions reduction rate


3.8%
(vs. FY2013 Results)



Zero Emissions

Reduction Rate (per Unit Production) of Industrial Waste Generation in Manufacturing Processes


12.4%
(vs. Previous Fiscal Year's Results)



Energy Use of Transportation


Reduction Rate (per Unit Production) of Energy Use of Transportation

5.4%
(vs. Previous Fiscal Year's Results)



Number of Employees completing In-House Remote Learning Courses

269
539 Completing 539 Courses in Total



Rate of Annual Paid Leave Taken

74.3%



Rate of Female Hired for Career-Track Positions

33%



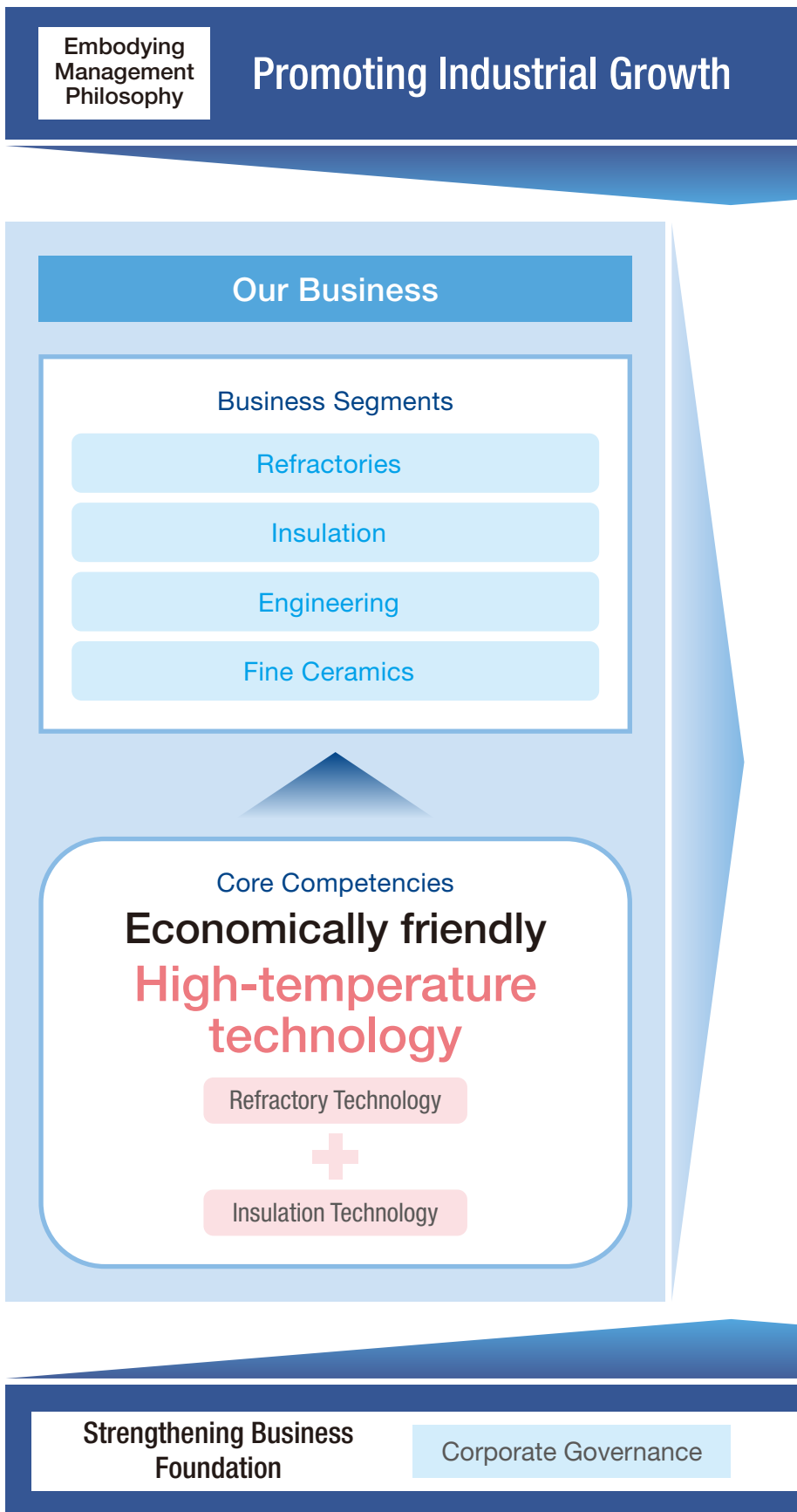
Rate of Outside Directors

40%
(As of June 29, 2022)
*All Outside Directors are Independent



*All Figures are based on FY 2021 Non-Consolidated Results.

Promoting sustainable growth strategies and creating



innovative values alongside stakeholders

and Achieving a Prosperous Society

Pursuing Sustainable Growth

Mid-Term Management Plan

Achieving record financial performance despite a gradual decline of steel demand in Japan by introducing various new products that meet customer needs and further expanding competitiveness by production optimization

Primary Action Plan 1: Sales Expansion & Production Optimization in Japan

Primary Action Plan 2: Overseas Business Expansion

Primary Action Plan 3: New Business Opportunities

Primary Action Plan 4: Vigorous Capital Investments

Sustainability Management

Continue to grow business and increase corporate value through implementing business activities that fully considering environmental, social, and economic sustainability



Establishing Sustainability Committee

Materiality Assessment

ESG/SDGs Initiatives

Compliance

Risk Management

Our Goal

Be a Leading Company
in High-Temperature
Technology



Co-Creating Value with Stakeholders

Working with stakeholders to
achieve a sustainable society

Customers

Contributing to Increasing
their Corporate Value

Shareholders/Investors

Maximizing Share Price

Business Partners

Collaborating on
Co-Creating Value

Employees

Building Pride and
Job Satisfaction

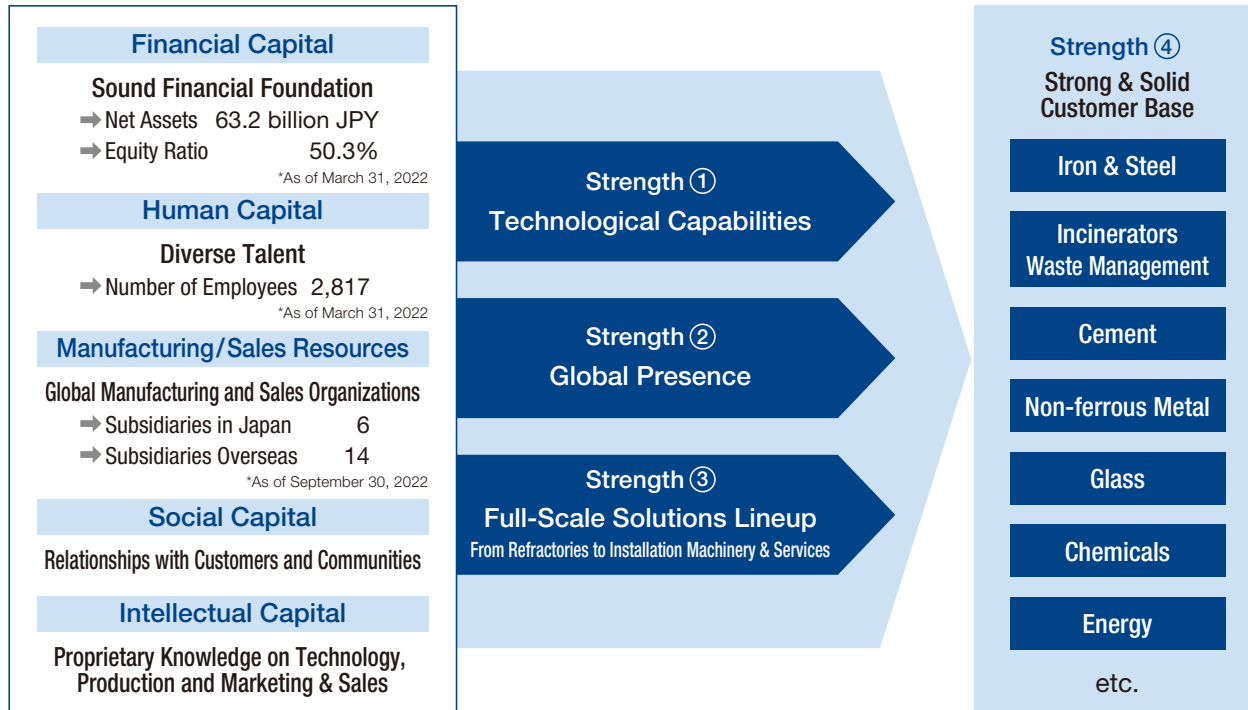
Local Communities

Achieving Prosperous and
Vibrant Communities

Future Generations

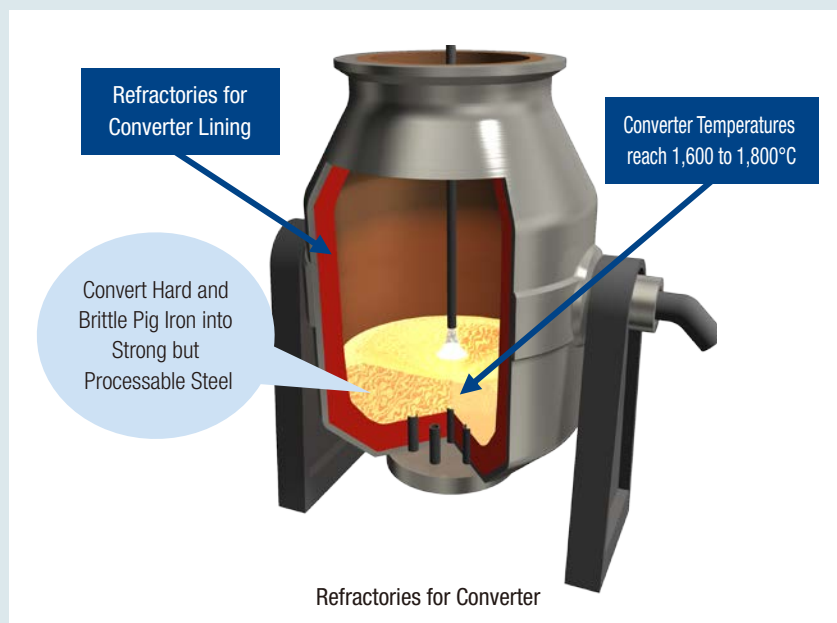
Passing on a Better Society
to Future Generations

One-Stop Solutions Provider of Refractories and Insulation Manufacturing to Installations with our Full-Scale Techno-



▼ The Role of Refractories

- Many of the materials that support our daily lives, such as steel, non-ferrous metals, cement, and glass, are produced in furnaces lined with refractories
- The refractory industry supports the foundations of key industries through supplying refractories, furnace designs, furnace installations, and other engineering works

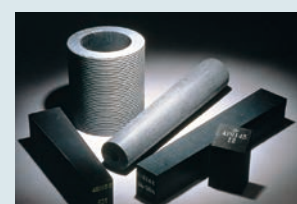


▼ Our Main Products

Shaped Refractories

Refractories with composition and shape optimized for the operating conditions of each high-temperature facility

- Basic Bricks
- Carbon Bricks
- Fire Clay and High Alumina Bricks
- Flow Control System Refractories for Continuous Casting
- Silicon Carbide Bricks
- Silica Bricks and Others



from Development, logical and On-Site Capabilities

A Leading Company in High-Temperature Technology

One-Stop Solutions Provider of Refractories and Insulation with Highly Advanced Technologies

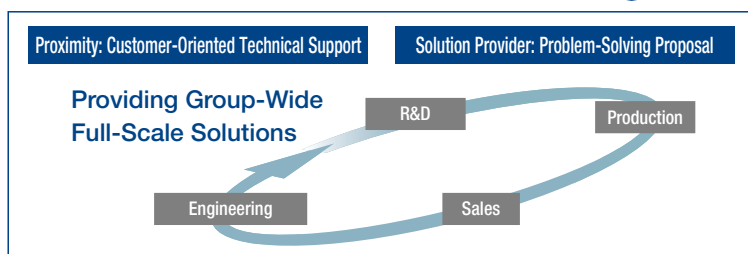
- Refractories
- Mold Powders
- Insulation Products
- Fine Ceramics
- Others

Development and
Manufacturing of
Refractories and
Insulation
Products

+

Furnace Designs
and Installations

- Blast Furnaces
- Converters
- Hot Stoves
- Incinerators
- Others



Technological Integration

Refractory

×

Insulation

- Developing New Furnace Materials
Researching Refractories containing Ceramic Fibers
- Developing New Furnace Linings
Researching on Furnace Linings with Lower Heat Loss by combining Refractories and Insulation Products

Further Collaboration in Overseas Business

Monolithic

Refractories in the form of powder or paste, which are applied to high-temperature equipment by pouring, gunning and coating

- Castable
- Precast
- Gunning
- Plastic and Ramming Mixes
- Mortar and Others



Mold Powders

Powdered Products added to Continuous Casting Processes for producing Steel Slabs, Blooms or Billets, aiding in Heat Retention, Oxidation Prevention, and Lubrication in the Molds

- Spray Dried Powders
- Fine Powders
- Powders with Exothermic Properties and Others



Insulation Products

Lightweight heat-resistant products with low thermal conductivity, such as ceramic fiber, microporous materials and porous bricks

- Various Modules
- Formed Products
- Insulation Boards
- Sheets
- Gaskets and Others



Fine Ceramics

High density ceramic products with excellent thermal conductivity and abrasion resistance for high-temperature equipment and a wide variety of applications

- Ceramic Parts for Semiconductor and LCD Manufacturing Process
- Highly Abrasion-Resistant Bearing Balls
- Heat and Corrosion Resistant Products
- Dies and Rollers
- Pump Parts and Others





President and CEO

Hiroyuki Fujiwara

Changes in the Business Environment and the Role of the Group

Contributing to Japan's Economic Development through nearly 150 years of Shinagawa History

Founded in 1875, Shinagawa's history is the history of the modernization of Japanese industry. Many of the industries that emerged during the Meiji period (1868-1912) required high-temperature manufacturing processes, creating demand for refractory bricks. Refractory bricks are used not only in industrial furnaces for metal refining and cement calcination, but also in a wide range of equipment such as ducts and boilers that pass hot gases. Shinagawa has developed our businesses hand in hand with many of these key consumer industries. We are proud of our contributions to the economic development of Japan through our business activities since our foundation in the Meiji era to the present

day, and we will continue to pursue the same path continually and constantly.

Contributions to the achievement of a sustainable society through our business activities

We stand at a great crossroads today. Climate change caused by global warming casts a shadow over the future of humankind as a major tradeoff for the social, economic, and industrial development we have enjoyed to date. Efforts to address environmental issues, including achieving carbon neutrality and other measures to reduce greenhouse gases, have become an essential task for every company in the world. In other words, companies must not only sustain their own growth, but also fulfill their responsibility and role for the sustainability of society. It is no exaggeration to say that this is becoming the most fundamental responsibility required of companies.

Core industries with high-temperature processes, such as the steel, chemicals, cement, and non-ferrous

We promote Sustainability Management from our unique position of supporting the world's key industries.

metals industries, will remain as essential as ever for the sustainable development of the world. At the same time, however, these industries certainly account for a very large portion of Japan's CO₂ emissions. Therefore, companies in these industries have a social mission to continue to develop and supply products that support the development of the world, while working to significantly reduce CO₂ emissions.

This is where Shinagawa Group plays a major role. Our role is to develop and supply high quality products and services that contribute to the reduction of CO₂ emissions as a leading company in high-temperature technology for companies around the world that have high-temperature processes. We will fulfill this important role as an industry leading solution provider with proven technologies demonstrated over our many years of business. Shinagawa Group is one of the few in the world with full-scale technological capabilities across a wide range of business segments, including not only refractories products with technical services, but also furnace engineering and installations of industrial furnaces

and plants, and non-refractory value added products such as mold powders for continuous casting. We made Isolite Insulating Products Co., Ltd, a wholly-owned subsidiary in April 2022. This now allows us to combine our refractory technologies with their insulation technologies to further broaden Shinagawa's solutions offerings.

Through our business activities, Shinagawa Group will continue to contribute to the economic development of Japan and to the achievement of a sustainable society.

Overview and Progress of the Mid-Term Management Plan

Achieve the final year target of the mid-term management plan one year ahead of schedule

The 5th Mid-Term Management Plan (FY2021-FY2023), which is currently underway, was launched amidst the

COVID-19 pandemic. Even in this challenging business environment, we plan on achieving the goals of the mid-term plan; net sales of 115 billion JPY, a record high ordinary income of 11.5 billion JPY, and return on sales (ROS) of 10% in FY2023, the final year of the plan.

In the first year toward this goal (FY2021), we were able to over achieve the plan, not only thanks to a favorable turnaround in the external business environment, but also as a result of the efforts from the previous mid-term management plan both in Japan and overseas. As for FY2022, the second year of the plan, we have revised our initial plan upward, planning to achieve our final year targets for both net sales and ordinary income one year ahead of schedule. However, these are only one of milestones for us. Important tasks for us are to link the current growth trend to further progress in the upcoming 6th and 7th mid-term management plans.

That said, the current business environment is by no means smooth sailing. The price of raw materials for our mainstay products has been rising since the second half of FY2020 due to the growing procurement risk of electro fused raw materials caused by China’s power regulations and zero-COVID policy, and the tight supply and demand of lithium carbonate caused by the growing demand for EVs. Furthermore, the business environment globally has become extremely severe due to rising crude oil prices and logistics costs affected by the situation in Ukraine, as well as the rapid

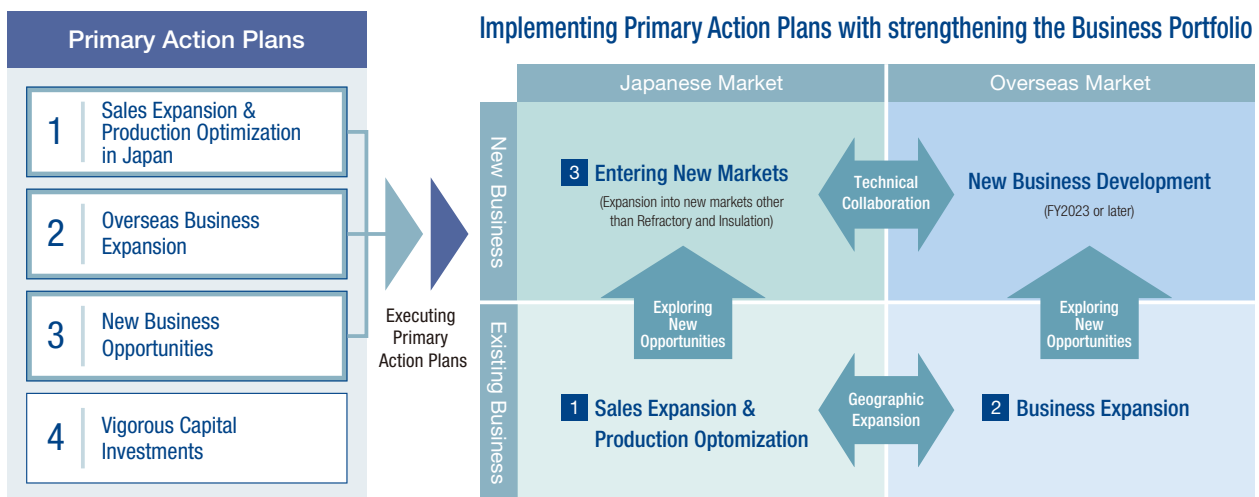
depreciation of the yen in the foreign exchange market. To fully assure smooth production activities of our customers without any interruption, Shinagawa Group continues to fulfill our supply responsibilities by increasing raw materials inventory and diversifying procurement sources. However, it is simply difficult to absorb rising raw material costs through internal efforts such as cost reductions alone, we are asking our customers to share the fair amount of the burden by increasing selling prices so that we can stay financially healthy. We believe that implementing these measures is essential to achieve 10% ROS in such a challenging business environment.

Implementing Primary Action Plans in response to Rapidly Changing Business Environment

In our 5th mid-term management plan, our basic policy is “Aiming for for the record financial performance despite the gradual decline in domestic steel demand by introducing new products that meet various customers’ needs and strengthening our competitiveness by production optimization” This basic policy reflects our strong will to accurately respond to trends in the steel industry, the largest customer base for our refractories business, and to enter into a new growth phase through fundamental reforms, such as restructuring our production system and reviewing our product portfolio.

The steel industry in Japan is expected to cut back their operations, while further expand their production over-

■ 5th Mid-Term Management Plan: Primary Action Plans and their Executions



seas. Crude steel production in Japan has declined by more than 20% from the 120 million ton level prior to the 2007-2008 global financial collapse, and further reductions in production capacity, such as blast furnace shutdowns, are planned in the future. Overseas, on the other hand, crude steel production in emerging economies are increasing: For example, India continues to rapidly increase year after year, overtaking Japan in 2018 to become the world's second largest producer. In addition, among developed countries, the United States has successfully revitalized its steel industry in recent years, and its crude steel production has begun to increase.

In the 5th mid-term management plan, we have identified the following priority measures to implement our basic policy in response to these changes in the market environment: 1.Sales Expansion & Production Optimization in Japan, 2.Overseas Business Expansion, and 3.Exploring New Business opportunities. Furthermore, in order to effectively implement these action plans, we have 4.Vigorous Capital Investments as an additional strategic action plan. In particular, we will be making significant investments in the near future to execute the first and second primary action plans.

Reinforcing our Domestic Profitability by Sales Expansion & Production Optimization in Japan

In Japan, since our mainstay steel business is not expected to show growth, we are promoting the following two main initiatives in response.

The first initiative is to expand business outside of the steel industry through sales expansion of refractory & insulation. Many companies in various industries have high-temperature production processes and all of them are facing common challenges, such as reducing CO₂ emissions. Shinagawa Group intends to increase its presence not only in existing markets but also in new markets by entering them by providing comprehensive solutions that combine refractory and insulation technologies. We are making significant investments for R&D to develop products and engineering technologies with innovative features that can address our customers' environmental challenges.

The second initiative is to strengthen competitiveness through production optimization in Japan. As the competitive



environment becomes increasingly intense, improving productivity and reducing costs requires a leap forward to a level that can be called "reform and innovation" rather than just "improvement." To achieve this, we are proceeding with significant capital investments and to consolidate productions, modernize production processes and bring automation and labor savings in manufacturing processes. Implementing automation and labor savings are especially important initiatives, as human resources are becoming the scarcest management resources due to declining birthrate in Japan. We will optimally allocate a small number of selected quality workforce to a high-tech and clean workplace and increase productivity at once.

Through these two initiatives, Shinagawa Group continues to reinforce our domestic profitability in Japan.

History of Overseas Business Expansion

Overseas expansion since 1997, started from China
 → In 2022, secured production bases in all major markets in the Indo-Pacific region



Announced New Strategic Acquisitions (May 2022)

- Brazil** • Saint-Gobain's Refractories Business
- USA** • Saint-Gobain's Alumina based Wear Resistant Ceramics business



Accelerating Future Growth through Overseas Business Expansion

Strengthening and expanding overseas business is key to accelerating our growth going forward. Our overseas expansion began with the establishment of a subsidiary in China in 1997, and since then, we have expanded our footprints into Australia, the United States, Indonesia, and India as of 2019. Then, in May 2022, we signed a definitive agreement with Saint-Gobain of France to take over its refractory business in Brazil and wear-resistant ceramics business in the United States. This acquisition is expected to be completed by the end of 2022 or early 2023. Total acquisition value is nearly 10 billion JPY, making it one of the largest M&A investments for Shinagawa Group in our history. This gives us its first production site in South America and allows us to secure produc-

tion sites in all major Indo-Pacific markets. In parallel with the expansion of production bases, we established Shinagawa Refractories Korea (SRK), a sales subsidiary in South Korea in April 2022 to strengthen our overseas sales functions.

We had initially set overseas sales of 22 billion JPY and an overseas sales ratio of 20% as targets for FY2023, the final year of the 5th mid-term management plan. Thanks to great efforts of our overseas business staff members, we achieved these targets already in FY2021, the first year of the plan, two years ahead of schedule. Furthermore, with the new addition of sales in 12 billion JPY from Brazil and USA, our overseas sales in FY2023 are expected to over-achieve the Mid-Term Management Plan, to reach 34 billion JPY and the overseas sales ratio will reach 27%. Note that these figures do not include synergies from this business acquisition: We aim to achieve further sales expansion by promoting our technical and sales collaborations with these new companies.

Environmental initiatives also represent an important issue that is common to the entire world. Many companies all over the world that have high-temperature processes are facing environmental challenges and likely to require our technologies and services. Shinagawa Group is one of the few corporate groups worldwide that can provide comprehensive solutions in the area of high-temperature technology. We will expand our customer base overseas by providing

■ New Overseas Projects currently Under Consideration

China

- **Additional Production Base**
Considering further collaboration with our JV partner, Anshan Hefeng Refractories (a major refractory manufacturer in China), including producing other products locally

India

- **Sales Collaboration**
Sales collaboration with Dalmia Bharat Refractories, India's second largest refractory manufacturer. Currently considering further collaboration
- **Additional Production Base**
Considering new production sites in India, following SGSR

USA

- **Sales Collaboration**
Sales Collaboration with HarbisonWalker International, the top refractory manufacturer in USA
- **Additional Production Base**
Considering new production sites in USA following SAM and the newly acquired abrasion-resistant ceramics business in Latrobe

Further expanding overseas business is the cornerstone of Shinagawa's growth strategy, and we will continue to actively explore investment opportunities, including M&A

technologies and services to address environmental issues.

Our efforts to expand overseas business for accelerated growth going forward are just getting started. We are now exploring various opportunities for sales collaboration with leading refractory companies in India and USA, establishing new production sites and M&A. Proper risk-taking is essential for our growth, and we will continue to make investment decisions without hesitation if required.

Promoting Sustainability Management

Establishing Sustainability Committee to properly face Sustainability Challenges

It is absolutely a must now for any company to face sustainability challenges with full integrity. Therefore, we have been taking actions to promote sustainability organizationally promotion system in order to address various social and environmental issues occurring on a global scale and to practice management aimed at achieving a sustainable society.

First, in April 2022, we established the Sustainability Committee, and in June 2022, we formulated the Basic Sustainability Policy. In May 2023, we identified 11 key sustainability issues as our materiality, which are the core for our action plans. We will continue to elaborate our actions and their target levels as we work towards each with the Sustainability Committee as the core driving force.

With regard to addressing climate change, which is a highly important topic in sustainability management, in 2021, we expressed our support for the recommendations of the Task Force on Climate-related Financial Disclosures (TCFD), and subsequently published information disclosure in accordance with the TCFD recommendations. In order to achieve carbon neutral by 2050, we have set an immediate target of 50% CO₂ emissions reduction target by FY2030 (versus FY2013 levels) and will proceed with specific action plans while assessing risks and opportunities based on climate-related scenarios.

Sustainability Initiatives: Implementing with our Growth Strategy

Shinagawa Group's CO₂ emission level is miniscule compared to, for example, our customers in industries with high-temperature processes. Therefore, even if we achieved net zero emissions, it would only make a very small contribution to reducing emissions in Japan as a whole. We rather believe that a major focus of our efforts to become carbon neutral is to help our customers reduce their CO₂ emissions through our core businesses. In other words, we consider the importance of developing sustainability initiatives as an integral part of our business growth strategy, rather than separating them from it and positioning them as just social contribution activities that do not interact with our core businesses.

By combining refractory and insulation technologies with our furnace engineering technologies, Shinagawa Group is able to support customers achieve thermal efficiency and service life improvements in their production processes. This means that our main contributions to CO₂ emissions reductions is to support our customers reducing their CO₂ emissions. And, therefore, the more customers we collaborate and the more projects we support by growing our business, the wider and larger our contribution to society for achieving carbon neutrality will be.

Co-creating value with Stakeholders for a New Era

We believe Shinagawa Group has a wonderful opportunity to expand the benefits of our customers and society through our business activities. Make sure to maximize profits by grasping all these opportunities, Shinagawa Group will execute primary action plans based on our Mid-term Management Plan without any delay to accelerate growth and enhance corporate value.

As we move toward a new era that is about to begin, Shinagawa Group will promote value co-creation with our stakeholders and continue to maintain our position as a leading company in high-temperature technology globally.

We look forward to your continued support as we accept and respond to the challenges ahead.

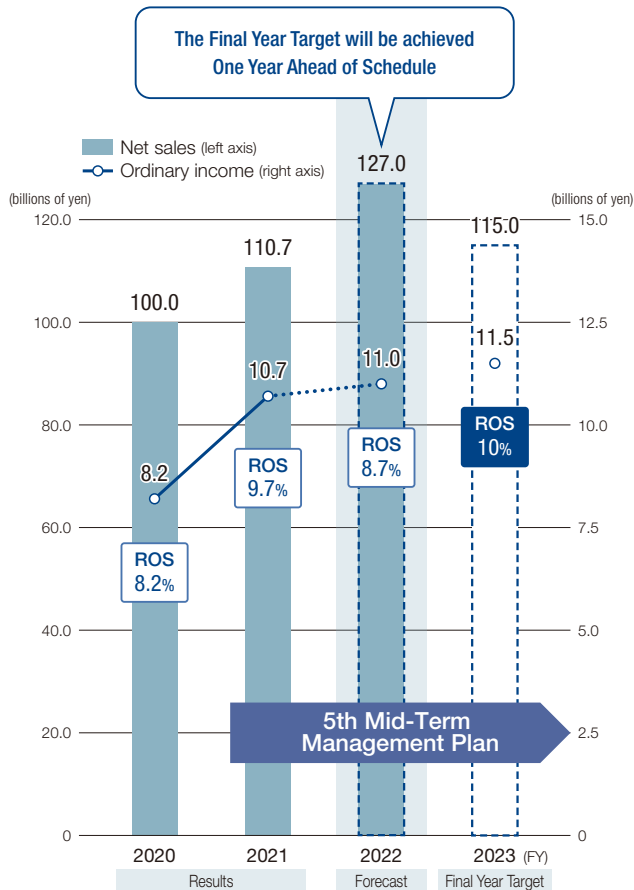
5th Mid-Term Management Plan (FY2021 to FY2023)

Basic Policy

Aiming for the record financial performance despite the gradual decline in domestic steel demand by introducing new products that meet various customers' needs and strengthening our competitiveness by production optimization

Primary Action Plans

- 1 Sales Expansion & Production Optimization in Japan
- 2 Overseas Business Expansion
- 3 Exploring New Business Opportunities
- 4 Vigorous Capital Investments



Note: Return on sales (ROS, %): $ROS(\%) = (\text{Ordinary Income} \div \text{Sales}) \times 100$

5th Mid-Term Management Plan: Final Year Target

	FY2023 Mid-Term Management Plan Targets
Net Sales	115.0 billion JPY
Ordinary Income	11.5 billion JPY
ROS	10%

Forecast made in 2020

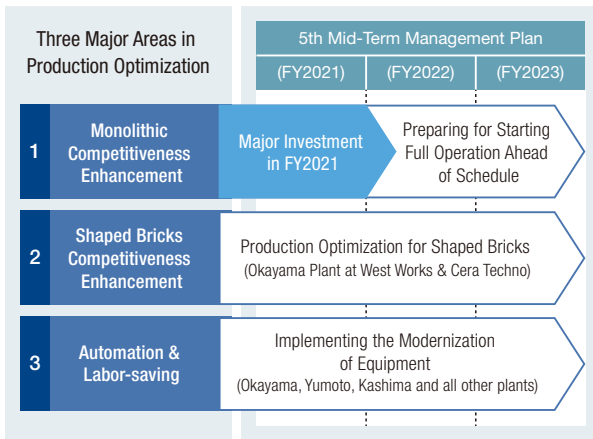
- Crude steel production in Japan: 90 million tons per year
- Exchange rate: 105 JPY / 1 USD

Current Status in 2022 (As of September 30, 2022)

- Crude steel production in Japan: 95 million tons per year
- Exchange rate: 135 JPY / 1 USD

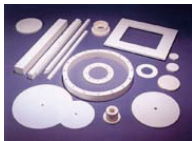
1 Sales Expansion & Production Optimization in Japan

- ▶ Sales Expansion of Refractory and Insulation
- ▶ Production Optimization



3 Entering New Markets

- ▶ New Development with Fine Ceramics Business (Shinagawa Fine Ceramics)
 - Mainly used as substitute for metal parts (Required properties: High temperature resistance, low expansion, wear resistance, chemical corrosion resistance)
 - Major customers include manufacturers of semiconductor and LCD manufacturing equipment, pumps, and specialty metals



Ceramics for Semiconductor / Liquid crystal Manufacturing equipment

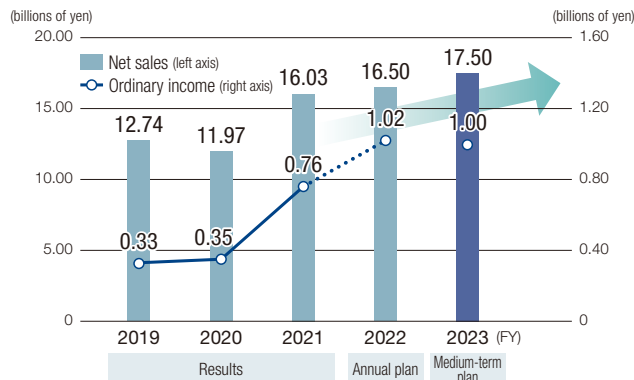


Ceramics for Various Pumps



Wear-resistant Ceramic Rollers

Considering going global in collaboration with the wear-resistant ceramics business in USA (Latrobe)



2 Overseas Business Expansion

Overseas expansion since 1997 started from China

- ▶ Secured production bases in all major markets in the Indo-Pacific region in 2022

Strategic Acquisitions

Brazil	May 2022	• Saint-Gobain's Refractories business in Brazil
USA	May 2022	• Saint-Gobain's Alumina based Wear Resistant Ceramics business in USA

Technology Transfer Agreement

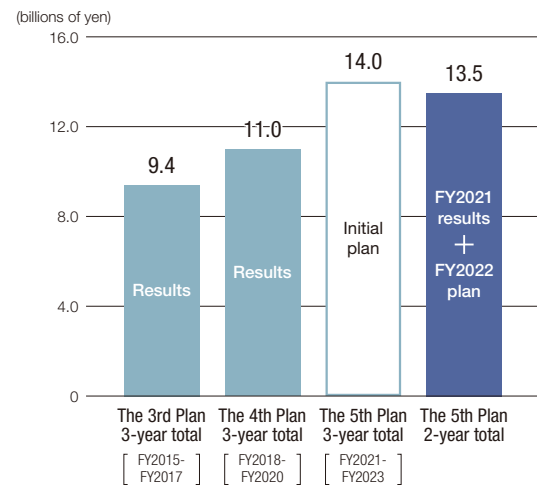
India	July 2022	• Technology Transfer of Shaped Refractory for steel to Dalmia
China	July 2022	• Technology Transfer of Flow Control System Refractory for Continuous Casting to Anshan Hefeng Refractories

4 Vigorous Capital Investments

Spent Initial 3 Years Budget by the 2nd Year

- ▶ Continue Vigorous Investment in the 3rd Year for the Future Growth

Capital Investment (by medium-term plan period)



Keys of Investment Strategy

- Production Optimization (Consolidating Monolithic Production in West Works: 3 to 1)
- Increasing Stability & Cost Competitiveness
- Further Modernization & Automation

Building solid financial base to facilitate sustainable and strategic growth investments

Aiming for a financial strategy that increases future corporate and shareholder value

Shinagawa's basic financial strategy is to achieve an appropriate balance among growth investment, retained earnings and shareholder returns. Our financial condition is inevitably affected by the business environment and the progress of our management strategies. Therefore, it is essential to be flexible in how we balance these three elements by accurate assessment of business drivers.

How we implement this balance has changed over the years as our management policy has evolved. After the creation of Shinagawa Refractories in 2009 by M&A, our management goals for the first through third mid-term management plan periods (from FY2009 to FY2017) were to fully integrate our infrastructure and to strengthen the organization's fundamental strengths. Therefore, our focus during that period was to increase and secure retained earnings that would allow us to make vigorous investments for future growth. As a result, we were able to increase our equity ratio from 28.7% (at the end of FY2009) to 46.6% (at the end of FY2017) through generating a positive net income.

Since then, through the 4th and 5th Mid-Term Management Plan period (FY2018–FY2023) with our goals with significant growth, we have shifted our management strategy to more forward looking one, to the “implementing action plans for future growth” and, as a result, our focus of financial strategy has shifted also to “growth investment.” In addition, we revised our dividend policy at the 5th mid-term management plan and now raise the dividend payout ratio from the previous target of 20% to around 30%, evidencing more focus on shareholder returns as well.

As for retained earnings, we are naturally continuing to accumulate a certain amount of profits, but this is only to prepare for continued growth investment and unforeseeable changes in the future business environment. Shinagawa implements our financial strategies not just to assure present stability, but to achieve future growth, as well as increase future corporate value and shareholder value.

Preparing for further vigorous growth investment

Now is the time for Shinagawa Group to play offense and to accelerate growth over the medium to long term. Accordingly, we are vigorously implementing growth investment and, in our 5th mid-term management plan, we are executing both capital and M&A investment on an unprecedented scale in our history.

We had originally planned a total of 14 billion JPY in capital investment over three years, but we executed almost the same amount of investment over the first two years and plan to sustain this pace through FY2023. The final total amount for the three years is expected to far exceed our original plan.

With regard to M&A investments, our policy is to take a proactive position for any acquisition opportunity that would allow Shinagawa Group to grow further. During FY2021 and FY2022, we invested approximately 20 billion JPY in total, including approximately 10 billion JPY to make Isolite Insulating Products Co., Ltd. a wholly-owned subsidiary and approximately 10 billion JPY for M&A in Brazil and USA.

Our Group has traditionally been taking conservative approach toward M&A and large capital investments. Although we believe that this corporate culture, which conducts strict risk assessments and studies of investment return, will continue to be passed down as our DNA, our recent rather significant decision to make two consecutive investments in amount of 10 billion JPY became a turning point in our investment strategy. This is the beginning of even more active moves toward such growth investments and M&A for the future.

Since Shinagawa Group has positioned “Overseas Business Expansion” as a pillar of our future growth strategy, it is likely that you will see our future investments more and more in overseas sites. Shinagawa began our overseas expansion in 1997. I used to station in Australia and was involved in the establishment of a local subsidiary in USA too. I would like to fully utilize my experiences from those days to support our overseas business expansion. In addition, I

served as an internal auditor and a member of the Audit & Supervisory Committee in the past. I would like to also focus on maintaining and improving our governance system from a compliance perspective from those experiences too.

Assuring high profitability and sound financials by utilizing various management indexes

We particularly place importance on three management indexes. These are Return on Sales (ROS), Return on Assets (ROA), and Return on Equity (ROE). In addition, we use Equity Ratio and Net D/E Ratio as a management index to ensure financial soundness.

These three management indexes of ROS, ROA, and ROE are essential indexes for us to properly and accurately evaluate our profitability and management efficiency. As for ROS, we established 10% as our target in the final year of the 5th mid-term management plan (FY2023). In FY2021, ROS was 9.7%, improved by 1.5% from the previous year. ROE is 8.8%, which I consider also is at an acceptable level, but we will naturally continue to aim for improvement.

With regard to Equity Ratio and Net D/E Ratio, however, we do not intend to pursue an extreme degree of financial soundness and security as we expect to continue making investments actively to accelerate growth in the future. For example, our Equity Ratio is at a high level of 50.3% as of March 31, 2022, but maintain it above 50% is not our necessary target. Furthermore, although our Net D/E Ratio is at extremely healthy level of 10.1% as of March 31, 2022, we will allow this ratio to rise to some extent as a result of financing necessary growth investments. We will consider using more financial leverage more in the future.

We now consider adopting Return on Invested Capital (ROIC) as a new management Index. ROIC is a very useful index for us to decide where to invest and where to divest. ROIC by each plant will show us the right course of actions when we make investments actively for future growth.



Director, Managing Executive Officer
Certified Internal Auditor (CIA)
Hajime Ichikawa

Providing financial support to growth strategies by considering sustainability initiatives as part of growth investment

Sustainability management has become a fundamental requirement for corporate citizens. We, too, have begun the great challenge of becoming carbon neutral by 2050, shown in our announcement of CO₂ emission reduction targets and other actions to advance environmental measures. Naturally, ongoing capital investment is essential to fulfill this goal. Capital investment to reduce CO₂ emissions and R&D investment to develop technologies and products that contribute to the reduction of CO₂ emissions at our customers will be both positioned as part of our growth investment so that we can fully carry out the necessary investments going forward.

Including sustainability initiatives, Shinagawa Group is entering an important phase in which it is important to actively invest in our future growth. Under these circumstances, the mission of mine as the Officer in charge of Finance is twofold: First, to maintain a stable financial base that can provide funds in a timely and accurate manner in response to strong funding demands; and second, to constantly examine the ideal business portfolio from the financial perspective of prioritizing investments. With this as my mission, I will continue to support Shinagawa Group's growth strategy from a financial perspective.

I would like to thank all our stakeholders for your continued support and encouragement as always.



Roundtable
Discussion

Strengths of the Shinagawa Refractories Group

In this session, we unravel the strengths of the Shinagawa Refractories Group, focusing on our traditional and core business of refractories, as well as related businesses.

Shinagawa Group's Main Features and Strengths

As a full lineup refractory manufacturer, Shinagawa Refractories has mastered the ability to provide customer-oriented solutions and built strong relationships of trust with our customers over 150 years.

Kaneshige: By sales, Shinagawa Group is among the top two refractory companies in Japan and the top five worldwide, making us a leader in the global refractory industry. We have a production and supply system providing a complete lineup capable of accommodating all markets where refractory materials are used. This feature allows us to be called as a full lineup refractory manufacturer.

Kurose: We provide not just products and services to a wide range of customers, including steel, non-ferrous metals, cement, and incinerators, as well as offering solutions to the challenges they face. This makes us unique in the industry, allows us to differentiate ourselves from our competition.

Ogata: Unlike ordinary industrial products, the products we supply are not completed just by the development and manufacture at our Group companies. This is because depending on how it is used in which process at the customer's factory, the functionality required for the refractories provided will vary greatly. We work closely with customers to develop refractories together by visiting their production sites to verify how they are used and what kind of failures with refractories they have experienced in the past. This customer-oriented products development system is one distinctively unique feature and strength of Shinagawa Group.

Kurose: I used to work for a steel manufacturer for around

three decades with many years working in departments that control the quality of steel products. Having that customer's perspective, I have had the strong sense that we have always been seen as a reliable partner by customers, willing to work with them very closely to face any new challenge that may arise. After my experience in the steel industry, I came to work for Shinagawa. And, when I look at our company from the inside again, I feel that our dependability and trust are largely due to our corporate culture backed by a long history.

Ogata: There is an important concept for manufacturing in Japan called "Three Reality "GEN" Principles:" GEN-ba (on-sites), GEN-butsumaru (actual products) and GEN-Jitsusho (facts). In order to solve the problems faced by our customers, our engineers need to go to the actual "site", observe the "actual products", and recognize the "facts" instead of shutting ourselves away in the laboratory. Shinagawa Group has earned the trust of our customers precisely because we have put this principle in practice since our founding.

Kaneshige: About 150 years ago, in the early Meiji period, our founder, Katsuzo Nishimura, started manufacturing refractory bricks with the advice and assistance of Eiichi Shibusawa, a Japanese industrialist widely known today as the father of Japanese capitalism. Launch-

ing the business for him was navigating completely uncharted waters—from the selection of suitable raw materials to developing the proper manufacturing methods—but despite many failures, he continued his process of trial and error and led the business to success. Our corporate DNA comes from this spirit of never giving up and daring to take on new challenges. We are proud to say that this DNA has been passed down to the present day in our corporate culture.

Kurose: During Japan's period of rapid economic growth, Japanese steelmakers were quick to establish a system that enabled them to manufacture high-grade steel with great efficiency. This was one of the driving forces behind the country's economic breakthrough. One of the elements underpinning this breakthrough was the technological innovation that extended the service life and increased the purity of refractories. Steelmakers and refractory manufacturers have shared the hardships of innovation, which has led to accumulating technology and building strong mutually trusting relationships. We have been able to build trust in relationships with customers in other industries as well, and I believe that having relationships of trust with a wide range of industries with high-temperature processes is another important characteristic of Shinagawa Group and a source of our competitiveness.

Human Resources as a Source of Strength

Strong focus on developing human resources with comprehensive knowledge and experience by actively conducting inter-departmental rotations and personnel exchanges with our clients.

Kaneshige: Many of our sales staff have technical backgrounds, and by utilizing their technical know-how and knowledge, we are able to grasp the customers' technical issues from the same point of view and propose proper solutions. In order for young sales staff to acquire a series of required knowledge such as product characteristics, development and manufacturing methods and on-site usage conditions, Shinagawa provides them proper training, and have them visit our customer sites frequently. This allows them to properly respond to all customers' requests by seeing issues from the same view point with them.

Ogata: There is in fact an extended version of Three Reality "GEN" Principles; It is called Five Reality "GEN" prin-

ciples, adding two ideas; "GEN-ri (theory)" and "Gen-soku (Principle)". "We need to create something new by successfully combining what we have discovered in the three "Realities" of our customers with the two "Ideas" that we have explored in our own laboratory. To implement this concept of Three Realities and Two Ideas requires specialists, not just with specific technical knowledge but with much broader range of cross-disciplinary knowledge and experience. All engineers and researchers in Shinagawa Group are capable of running the PDCA cycle by themselves: Conducting experiments in the laboratory, making prototypes, bringing them to the customer's site, putting them into actual use, and analyzing the results.

Kaneshige: As a full lineup refractory manufacturer, it is essential for our engineers to have comprehensive knowledge and experience across divisions, from product development to furnace design and installation, to provide total solutions that solve the problems faced by customers. For this very reason, we are active in inter-departmental rotation as an important human resource development measure.

Kurose: We actively engage in personnel exchanges not only within Shinagawa Group but also with our customers. Understanding operational conditions at our customers' plants is essential to improve the performance of our refractories. Our customer's engineers also benefit from having knowledge of refractories and furnaces, leading to improved processes and technology development further and faster. Therefore, we are actively engaging in mutual dispatch of engineers to provide education and training in order to develop human resources with a wide range of knowledge and experience.

Ogata: There are almost no employees who majored in refractories when they were university students. Almost all employees start learning about refractories after joining Shinagawa Group. We have our own unique distance learning curriculum for employees, which offers a wide range of practical programs for acquiring knowledge related to refractories. Shinagawa Refractories is a place where motivated employees can acquire practical knowledge of refractories in a very short period of time. And our employees fully utilize the knowledge gained here to propose solutions to the customers, make them pleased, which increase motivation as a result. This cycle of positive reinforce-



ment vitalizes our talents.

Kurose: In employee training, we place as much emphasis on improving safety awareness as we do on teaching technologies. Ensuring safety is absolutely a prerequisite for all operations, and that improving safety awareness also leads to improved quality and production management. Therefore, to further raise safety awareness, in April 2022, we established the Hazard Simulation Training Center in the Okayama Plant of the West Japan Works. This center also offers training using virtual reality (VR) to experience falling from heights and having 'your hand caught in a suspended load, as well as training using actual equipment to experience being caught in a roll, receiving an electric shock, and experiencing a dust explosion. I believe that hands-on experience using the five senses is much more effective than just learning from books. We will introduce this program to other plants and group companies in the near future.

Shinagawa Group's Competitive Advantages

Shinagawa Refractories is one of the few companies in the world that possesses all of the three competitive advantages: Full product lineup, Highly advanced technology, and Talented human resources. In addition, the development and manufacture of High-Quality Mold Powders is a symbol of "trust" from our customers.

Kaneshige: I believe that Shinagawa Group's competitive advantage is its comprehensive capability to build high-temperature furnaces/processes in all industries. We are very proud to have such complete solution that is "One and Only" even by global standards. Let

me discuss these three key elements. The first is our full product lineup. Shinagawa Group has been developing and manufacturing each and every material required for furnace installation, including all kinds of refractories and insulations. The second is our

high advanced technological capability. We have all the technology and expertise necessary for furnace installation, from refractory manufacturing, furnace design, specification confirmation, installation, and even to subsequent repair and dismantling. The third is our talented human resources. All staff involved in sales, furnace design, refractory manufacturing and installation work in unison and are able to accurately understand customer requirements to create proper solutions. As I said, this is the very result of our unique human resource development policy, which includes regular personnel rotation across divisions and exchanges with our customers. I believe that we are probably the only corporation, whether in Japan or elsewhere, that possesses all these three competitive advantages.

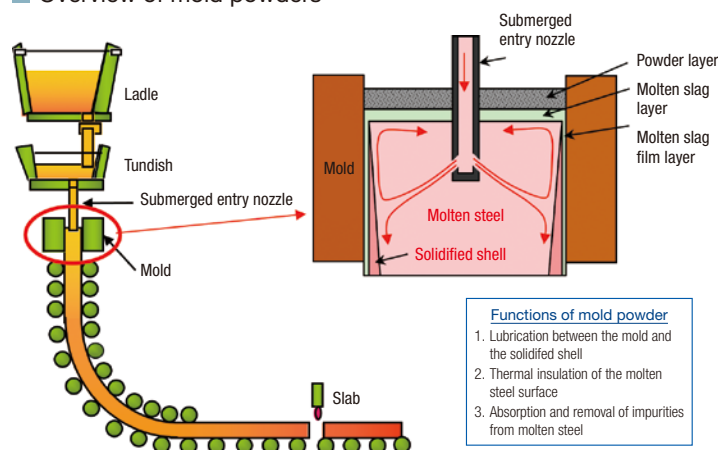
Kurose: Having mold powders makes Shinagawa so unique as they very well represent our “Full product lineup” and “Highly advanced technology.” Mold powder is highly functional material that is added to the molds during continuous casting processes of steel making. It is called as “the most important auxiliary material” in the continuous casting process, and is essential for the stable production of high-quality steel products. Shinagawa started developing mold powder in response to a special request from a steel manufacturer nearly a half-century ago. Since then, we continued our research efforts to achieve higher quality and better functionality. There are only a few refractory manufacturers that develop and manufacture mold powders in the world and we are certainly the only one in Japan. I believe it is no exaggeration to say that our refractories and mold powders have been supporting the Japanese steel industry and

their success for many years.

Ogata: The development goal for refractories has traditionally focused on extending service life, while the development goal for mold powders was set as improving steel quality for our customers. In fact, development of mold powders allowed us to view refractories also from “how to improve the quality of our customers’ products.” This drastic change with our perspective toward refractories further strengthened our ability to provide solutions that are precisely tailored to the needs of our customers.

Kurose: Continuous casting is the de facto method for manufacturing steel products nowadays. Wherever they make steel always uses mold powders. The high quality of Japanese steel products are well-known worldwide. In other words, the fact that Shinagawa has been a manufacturer and supplier of mold powders in Japan has resulted in us winning the tremendous trust from global steel industries.

■ Overview of mold powders



The competitive advantages established in Japan provides us momentum to overseas business expansion in full scale: Aiming to be No. 1 worldwide in the medium- to long-term.

Kaneshige: The global steel industry continues to grow, and we will be taking full-fledged measures to expand our business there for refractories and mold powders. In markets such as China and India, the No. 1 and No. 2 in terms of crude steel productions, and North America, where the steel industry is showing remarkable recovery, we are promoting sales expansion mainly in

the steel industry. As for Brazil and Australia, as in Japan, Shinagawa will provide full support for industries other than iron and steel also as a full lineup refractory manufacturer. An M&A transaction executed in May 2022 added the South American region to our scope of business. Now Shinagawa Group has secured production sites in all major markets in the Indo-Pacif-

ic region and is sufficiently prepared for full-fledged overseas business expansion.

Ogata: In overseas business expansion, the practice of providing customer-oriented solutions that we have been implementing in Japan will also work as very powerful weapon. Compared to many overseas companies that sell large product quantities of refractories with the same material formulation and shape, Shinagawa Group has advanced production technology that allows us to adapt material formulations and shapes in further more details, enabling us to supply specifically customized products optimal for each customer's operations. In other words, we offer significant contributions to quality improvements for our customers'



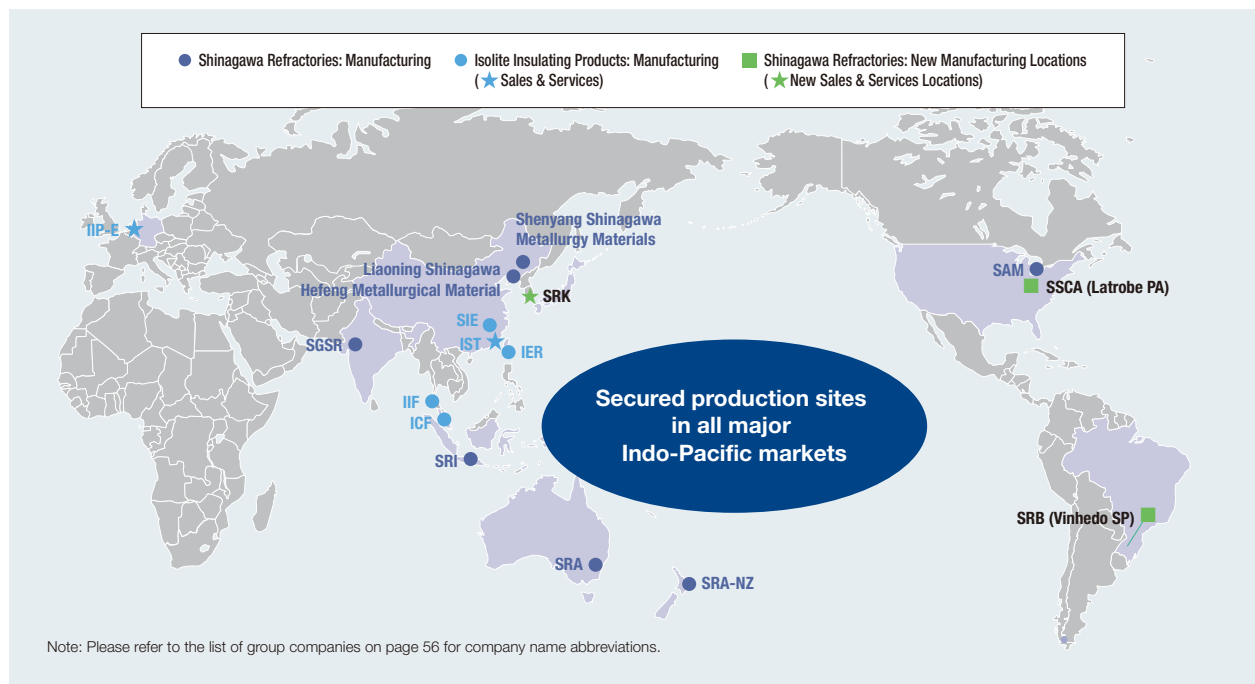
products. This is why customers choose Shinagawa Group for their refractories needs.

Kurose: We will further enhance our competitive advantage globally by combining the manufacture and sale of refractories with our furnace engineering and installation services.

Kaneshige: In any case, it is essential to secure proper talents in all business segments, including R&D, marketing & sales, engineering design, and installation, to ensure that our successful business model in Japan can be adapted and applied overseas. We also should explore many other different options available to us, such as hiring and training personnel locally and forming business alliances with local companies, while implementing a remote monitoring system using ICT technologies at the same time. Furthermore, we will strive to achieve the No. 1 in global sales in the medium- to long-term by maximizing our competitive advantages in these three areas of full product lineup, advanced technology, and highly skilled and motivated talents.

Ogata: We newly added a U.S.-based abrasion-resistant ceramics business to Shinagawa Group business portfolio in May 2022. This business has much in common with our fine ceramics business in Japan with regard to technology, and we plan on actively promoting collaboration between the twos to develop in Japan as well as worldwide.

■ Adding global locations with further worldwide collaborations



Contribute to the realization of carbon neutrality for our customers through our cutting-edge research and development for continuously creating future technologies

Ogata: One sea change currently underway is that efforts to improve the global environment are becoming an urgent issue. Shinagawa Group's signature technologies for ultra-high temperature processes are used in energy-intensive industries everywhere. These industries were, are, and will continue to be essential and key industries for our society. Therefore, our greatest social mission going forward is to support energy-intensive industries become more efficient. This mission is, in other words, to contribute to sustainability through our business activities. We have more than sufficient technical capabilities and expertise to achieve this goal. It is our plan to continue joint research activities with our customers to create necessary technologies and products together.

Kaneshige: For example, one way to improve the efficiency of high-temperature processes in the interest of reducing CO₂ emissions is to reduce heat loss. Shinagawa Group has both refractory technologies at Shinagawa Refractories and insulation technology at Isolite Insulating Products, and by integrating these two technologies for installing furnaces, we can achieve even higher efficiency in terms of reducing heat loss. In the steel industry, efforts are being made to reduce CO₂ emissions by converting blast furnaces/basic oxygen furnaces to electric furnaces, and to pursue further energy efficiency by increasing in size of electric arc furnaces. I am confident that our technologies for detailed refractory manufacturing and furnace engineering will be of great help for these efforts by the steel industry. To support future innovations in the area of electric arc furnaces, we have already started studying new designs of electric arc furnaces and the shapes and formulations of refractories for these new furnaces.

Kurose: Shinagawa Group's engineering team has also begun to introduce cutting-edge technologies such as sensor and visualization methods to analyze the furnace status during operation and provide timely feedback to our development and manufacturing teams. This allows us to develop materials that can reduce CO₂



emissions, leading to highly-efficient furnace installation and repair methods. We also welcome cooperation with partner companies that excel in sensors and other technologies, as well as the formation of alliances with other industries.

Ogata: Achieving carbon neutrality is a very challenging goal that cannot be achieved just by one group of companies or one industry alone. I believe that this goal can only be achieved if all industries work together. That is why we need to accurately communicate to not only our customers but entire society what can be achieved through refractory technology and insulation technology. We will then provide our group's technology to as many companies as possible so that they can fully take advantage of our technologies. In addition, it is necessary to actively learn and incorporate the cutting-edge technologies of other industries, and to further innovate ourselves. In other words, it is important to bring up our comprehensive competitive advantages to the next level in order to achieve carbon neutrality.

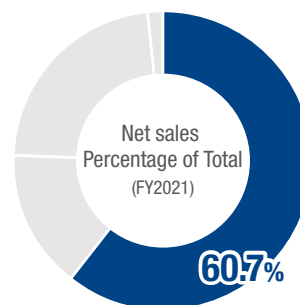
Kaneshige: In order to realize "Contribution to Sustainability" through our business, we continue to promote research and development that is always ahead of the times, and to develop new technologies that will be needed in the future. To this end, our sales, production, engineering, and R&D teams will continue to work closely in unison to further strengthen the comprehensive competitive advantages of Shinagawa Group.

Actively Entering into New Markets while Further Expanding Existing

Refractories

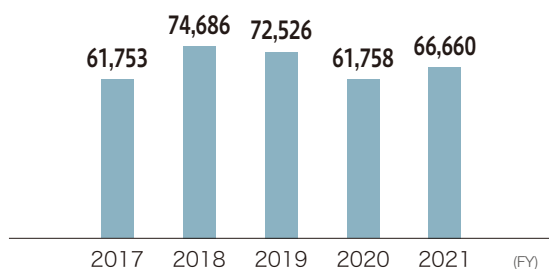
Growth Strategy

- Combining R&D, manufacturing, and sales capabilities to anticipate and meet customers' needs
- Business expansion in non-integrated steel business segments: Electric arc furnaces, cement and other industrial furnaces
- Overseas business expansion (Pacific Rim region including India)
- Establishing optimal manufacturing, sales and services locations for each region/furnace type: Proximity strategy
- Contributing to society's goal of achieving carbon neutrality with our eco-friendly/green products



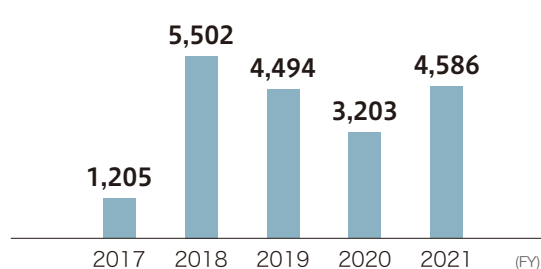
Net Sales

(millions of yen)



Operating Income

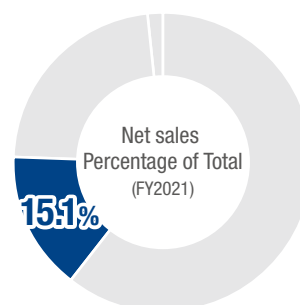
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Insulation

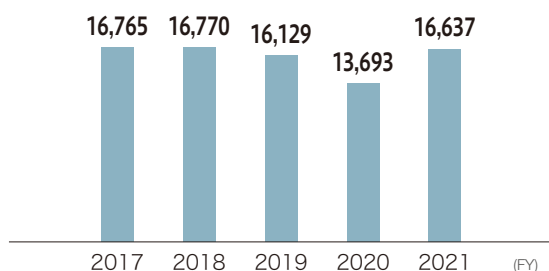
Growth Strategy

- Strengthening the foundation of the insulation business by expanding sales of new products such as microporous heat-insulation boards and heatproof filters
- Developing businesses in growth areas such as semiconductors, lithium-ion batteries, and products related to electronic components
- Fully utilizing our overseas manufacturing locations to expand the insulation business mainly in Asia and Oceania



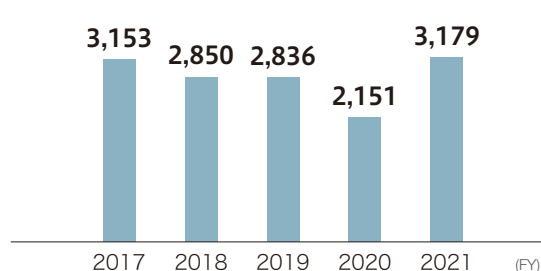
Net Sales

(millions of yen)



Operating Income

(millions of yen)

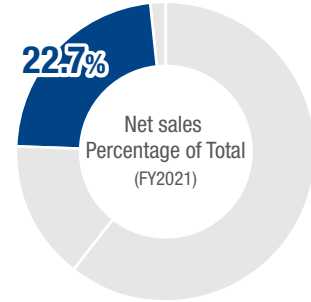


Businesses to Promote and Achieve Broad Growth Strategy

Engineering

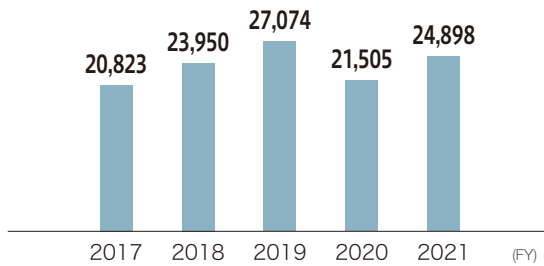
Growth Strategy

- Providing services with short leadtime and high quality by close cooperation with installation companies
- Entering into new markets and developing new customers based on our proven experiences in steel, non-ferrous metals and environment
- Offering comprehensive solutions to customers facing challenging on carbon neutrality
- Expanding sales in the industrial furnace market by fully utilizing our advanced technologies of furnace design and refractory formulation



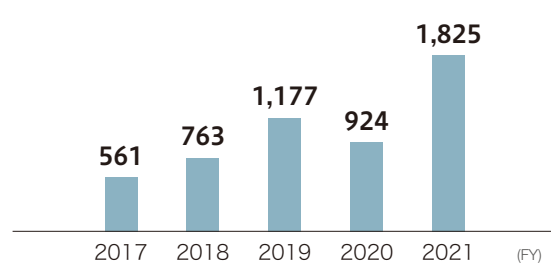
Net Sales

(millions of yen)



Operating Income

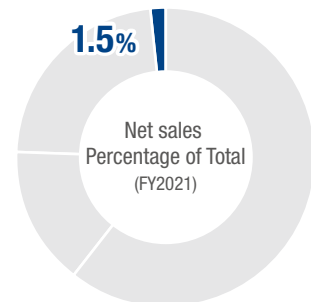
(millions of yen)



Fine Ceramics

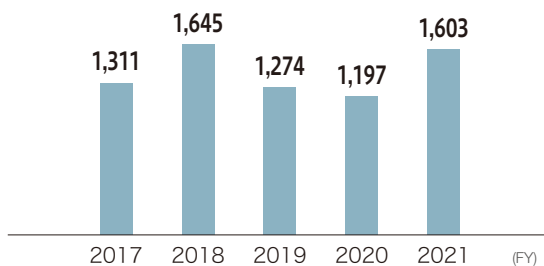
Growth Strategy

- Increasing production capacity for semiconductor/LCD manufacturing equipment markets
- Growing sales by enriching our lineup of abrasion-resistant ceramics products
- Entering new markets of special evaporation materials
- Developing new applications for ceramic thermal paints



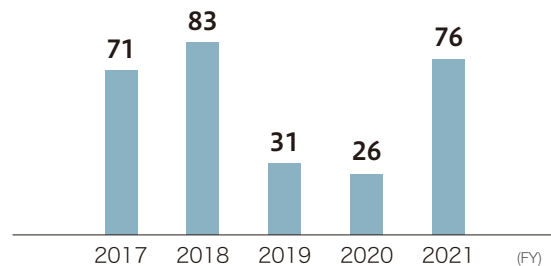
Net Sales

(millions of yen)



Operating Income

(millions of yen)

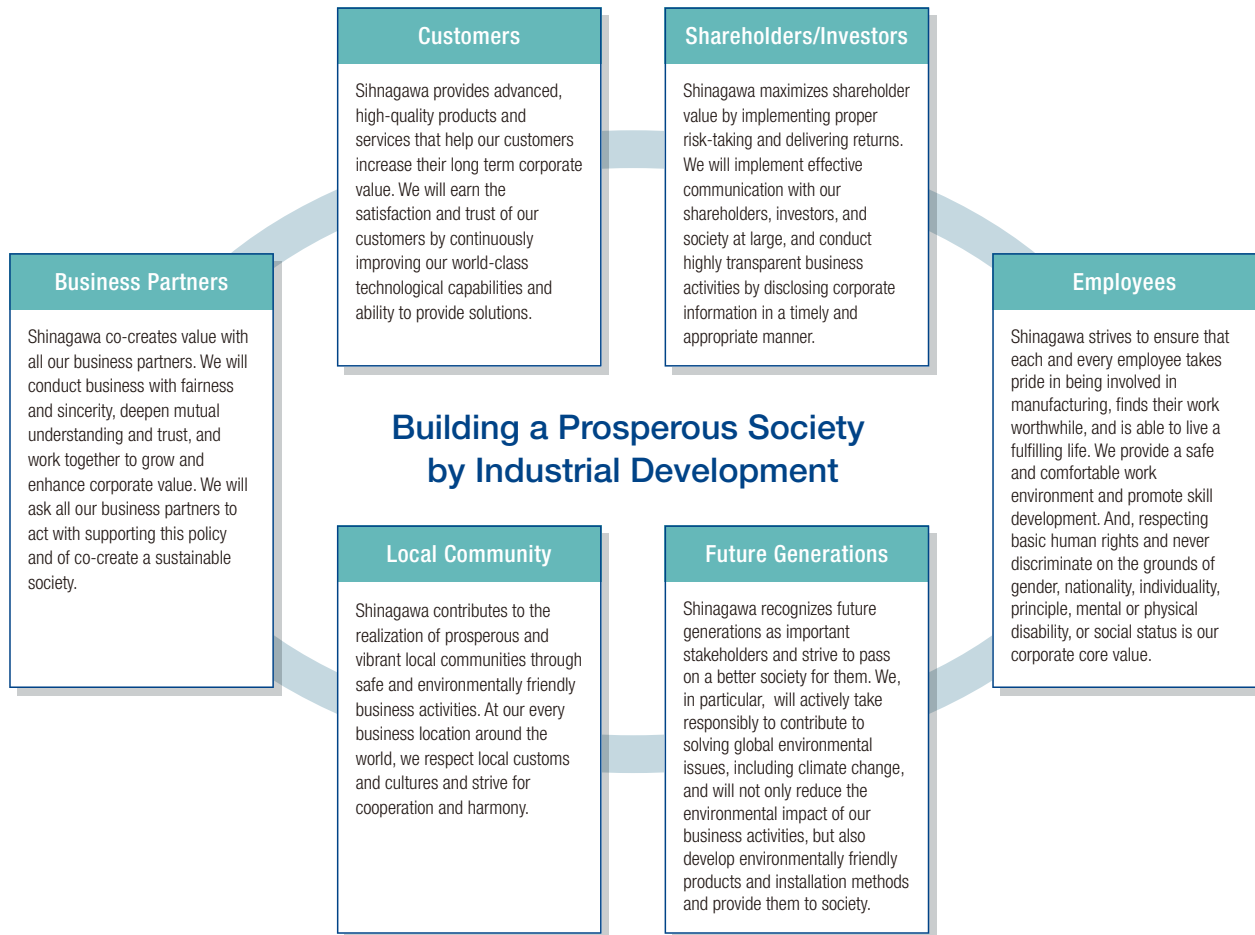


*Consolidated net sales figures exclude the real estate segment

Our Commitment & Action Plan

Based on our management philosophy of “Creation of a Prosperous Society by Industrial Development,” Shinagawa will work together with our stakeholders to create a sustainable society from the perspectives of “Environment,” “Society” and “Governance.” We will continue to grow through sustainable business activities and increase corporate value.

Under our Corporate Conduct Charter, we will contribute to the development of industrial society through fair competition, ensure respect for human rights and compliance with laws and regulations globally, and act with honesty, fairness, and integrity as a member of global society.



Role of the Sustainability Committee

- 1 Develop and revise the Basic Sustainability Policy
- 2 Propose action policies related to environmental issues (climate change, resource recycling, etc.) and social issues (human rights, social contribution activities, diversity and inclusion, etc.)
- 3 Develop specific action plans for these policies and manage progress
- 4 Address any other important sustainability issues

Sustainability Management Promotion Organization



Materiality at Shinagawa

SDGs	Topic	No.	Materiality
	Climate Change and Reducing Environmental Impact	1	Develop and provide environmentally friendly products and solutions to contribute to the reduction of CO ₂ emissions and energy conservation.
		2	Reduce CO ₂ emission and promote energy conservation in production processes.
		3	Minimize the impact on the environment by promoting refractory recycling and reducing waste.
	Quality Improvement and Stable Supply	4	Support the operations of our customers by consistently providing high quality products and services.
	Innovation	5	Consistently innovate technologies through active capital investment and developing human resources to improve productivity and cost competitiveness.
	Health and Safety	6	Prevent accidents through continuous improvement of the safety environment in works and furnace construction sites and safety training.
	Diversity, Inclusion & Respect for Human Rights	7	Create workplace environments in which allow diverse workforce can thrive to play active roles.
		8	Establish sound workplaces and responsible supply chains that respect human rights.
	Compliance	9	Fully comply with laws and regulations to build fair and sound relationships with employees and partner companies.
	Stakeholder Relations	10	Contribute to the sustainable development of local communities by promoting communication and deepening engagement.
		11	Make sound profits through business activities and return them to stakeholders.

▲ Legend ■ : E (Environment) ■ : S (Social) ■ : G (Governance)

The working group, led by the President and CEO, identified a wide range of issues of importance to Shinagawa Group based on environmental, social, and governance perspectives and in light of the SDGs, GRI Standards, ISO 26000, and other standards, and developed a list of materiality. Materiality in this list was prioritized based on the three criteria: "Social Significance," "Core Values," and "Shinagawa's strengths." After intensive discussions based on the items that were evaluated as highly important, at the Sustainability Committee meeting held in May 2022, we identified 11 items as a result of discussing the significance of our existence and the value that we should provide.

	Action Details	Identified Materiality
Identifying Issues	<ul style="list-style-type: none"> Identified wide range of potential materiality and related initiatives 	First Draft 235 items
Sorting and Categorizing	<ul style="list-style-type: none"> Sorting and Categorizing Editing Ensuring compliance with international frameworks Additional suggestions for materiality 	Second Draft (Long list) 84 items
Assessment	<ul style="list-style-type: none"> Assessment of potential materiality based on criteria 	
Analyzing results of the assessment	<ul style="list-style-type: none"> Analyzing results of the assessment 	Materiality: First Draft Narrowed down to 25 items
Discussions	<ul style="list-style-type: none"> Discussions based on items assessed as highly material Evaluation from perspectives of stakeholders, ESG, and international frameworks Reevaluation of items assessed as less material Considering additional items Proofreading 	
	<ul style="list-style-type: none"> Reevaluation of the 25 items for further narrowing down by discussions on the significance of the company's existence and the value we should provide 	Materiality: Second Draft Identified 11 items

Process for Identifying and Reviewing Materiality



Environmental Policy

Basic Policy

Aiming to be one of the most Environmentally Friendly & Sustainable Companies, Shinagawa Group considers local and global environmental conservation as one of the most important cores of our business activities.

Action Policy

- 1. Development of Environmental Management System**
We are fully committed to complying with environmental laws and regulations and fulfilling our promises to local government and local communities. We set our own targets for environmental improvement, strive to achieve them, and work to develop a management system for continuous improvement.
- 2. Initiatives to Reduce Environmental Impact and Improve Environmental Performance**
Considering the life cycle of all our business activities, including procurement, production, sales, distribution, and technological development, we will strive to reduce environmental impact and improve environmental performance by utilizing sustainable resources, reducing energy consumption, recycling, reusing goods, preventing pollution, and reducing waste.
- 3. Environmental Education**
To ensure that all of our employees are aware of and proactively engage in environmental conservation activities, we ceaselessly conduct company-wide educational activities and work to raise environmental awareness.
- 4. Environmental Communication**
In order to fulfill our social responsibilities in all regions and areas in which we operate, we strive to actively disclose and collect information, and work together with society to contribute to global environmental protection and conservation.

Support for the TCFD (Task Force on Climate-related Financial Disclosure) and its Recommendations

Global climate change in recent years has had a major impact on society in various ways, and has started to make a serious impact on the global environment and the lives of citizens.

In December 2021, Shinagawa announced our support for the TCFD recommendations and joined the TCFD Consortium, an organization of supporting companies domestically in Japan.

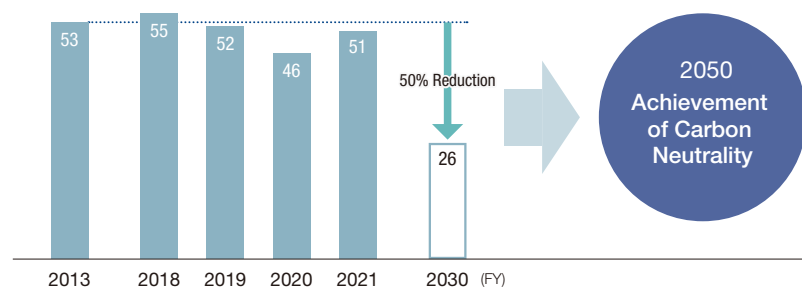
Shinagawa Group considers responses to climate change as a crucial management issue, seriously faces them to understand the opportunities and risks that impact our business. We actively disclose our efforts and contribute to the mitigation of climate change through our business activities, while seeking new business opportunities through contribution to issues of climate change.

In addition, many of our customers emit large amounts of greenhouse gases in their manufacturing processes, and they are all actively engaged in exploring fundamental changes to their manufacturing methods, including conversion of heat sources, to reduce CO2 emissions. Shinagawa Group is committed to support these customers' initiatives by providing products and technologies in the broad areas of refractories, thermal insulation, and installation work.

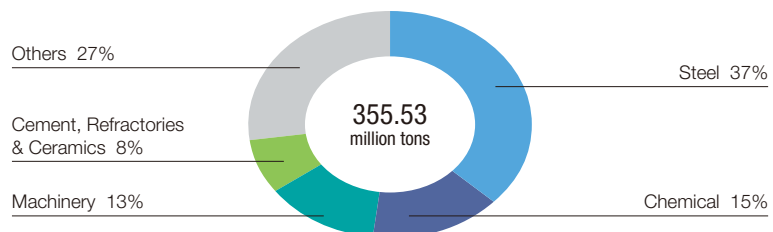
Shinagawa's Commitment for reducing Greenhouse Gas Emissions: 50% by 2030 (vs 2013) and achieving Carbon Neutrality by 2050.

Suppliers			Shinagawa		Customers			
Scope3			Scope1	Scope2	Scope3			
Mining	Raw material processors	Carriers	Burning Fuels	Use of Electricity	Steel	Chemical	Cement	Non-Ferrous

CO₂ Emission Reduction Target (Unit: thousand tons/year)



(Reference) CO₂ Emissions by Industry (FY2020)



Source: Data from the National Institute for Environmental Studies, Greenhouse Gas Inventory Office (Greenhouse gas emissions data from Japan [1990-2020], preliminary figures)



Environmental Management System (EMS)

In order to effectively promote our environmental policy, Shinagawa appoints an Officer in charge of Environmental Management, who is fully responsible for overall management of the environmental issues.

Since obtaining certification in 2002, we have undergone annual audits by a certification authority to ensure that our environmental management system is in full conformance with the ISO 14001 standard, and to confirm our ongoing conformance and effective implementation.

Certification Authority: JIC Quality Assurance Ltd.



Environmental Impact Reduction Activities

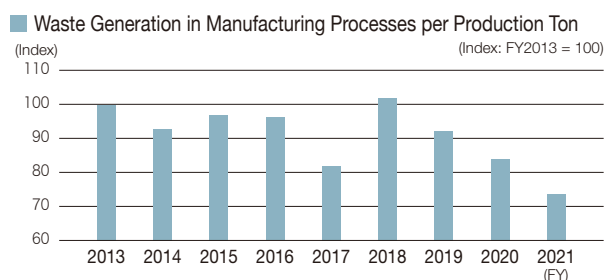
Shinagawa promotes integration with our business processes for sustainable operation of EMS activities.

In accordance with our environmental policy, we promote zero emissions activities in manufacturing processes, modal shifts in product transportation, and various streamlining measures to improve our environmental performance, including sustainable use of various resources and energy conservation.

Zero Emissions Activities

Zero Emissions is the concept of a resource-recycling society that does not produce any waste by effectively utilizing all types of waste as raw materials, and was proposed by the United Nations University in 1994. Shinagawa is promoting this concept as an initiative that has two major implications for our company.

- (1) Zero Emissions is an extremely important goal as the SDGs have become more prevalent in society.
We have established a new department with additional staff to increase our focus on reducing environmental impact.
- (2) Waste reduction is an opportunity to improve profitability.
We are developing activities based on the idea that "losses (such as raw materials lost in the production process) are lost profits."

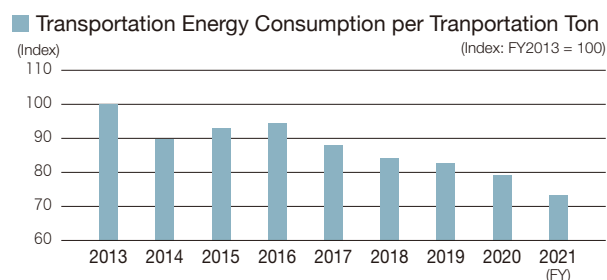


Promoting Modal Shifts in Product Transportation

In order to promote carbon neutrality by reducing greenhouse gas emissions, Shinagawa is actively promoting shifts from truck transportation to rail and ship transportation, methods which emit less CO₂, as well as improving logistics efficiency by consolidating loads and changing packing methods.

Furthermore, transportation staff from the manufacturing and sales divisions meet regularly to report and discuss the status of activities to promote modal shifts and improve logistics efficiency, in an effort to maximize effectiveness and develop leadership roles for environmental issues.

In addition, with the ongoing expansion of our overseas production locations, we are not only reviewing loading and packaging methods for export, but are also working to significantly shorten transportation distances, which allows us to reduce CO₂ emissions.



Environmental Education and Communication

Shinagawa is working to raise environmental awareness by implementing various environmental education curriculum and through environmental audits conducted by internal environmental auditors.

Also, in order to fulfill our social responsibilities in all regions and areas in which we operate, we work together with local communities to contribute to global environmental protection and conservation, including the reduction and proper management of industrial waste.

Major Environmental Education Curriculum

Timing	Curriculum
June	The EMS Mechanisms
	Proper Storage of Waste Materials
November	Internal Environmental Auditor Training
December	Report on Survey of Trends in Environment-Related Laws and Regulations
January-Feb-ruary	Education for EMS Managers
	Education for EMS Legal Staff



Internal Environmental Auditor Education



Site Inspection of an Industrial Waste Disposal Sites

Procurement Policy

As a trustworthy business partner with all of our suppliers, Shinagawa conducts our procurement activities in a fair and sincere manner based on mutual understanding and trust based on the following basic procurement policy.

1. Compliance
2. Fair Competition
3. Partnership
4. Selection of Suppliers
5. Green Procurement
6. Promoting CSR

Promoting CSR

Shinagawa has established the "CSR Procurement Guidelines" in order to share our awareness of social responsibility with our suppliers and promote CSR initiatives throughout the supply chain with the understanding and cooperation of our suppliers.

CSR Procurement: Flow Chart



For details, please refer to the Procurement Policy page on our website ▶ https://www.shinagawa.co.jp/profile/purchase_policy.html

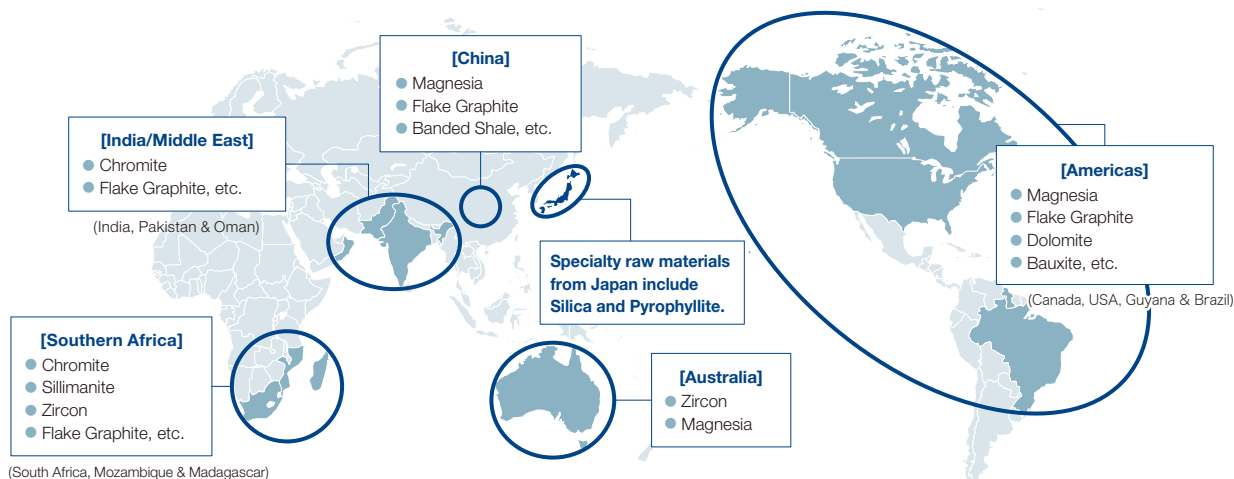
Supply Chain Risk Management

Shinagawa is highly dependent on procurement from China for most of our refractory raw materials and purchased products.

By implementing the measures listed on the right, we are reinforcing our stable procurement system, including reducing our dependence on China.

1. Establishing multiple sources within China
2. Expanding procurement from outside China
3. Strengthening relationships with suppliers in Japan
4. Holding appropriate inventory to counter risks
5. Expanding usages of various recycled raw materials

Status of Stabilizing Procurement System Utilizing Sources Outside China



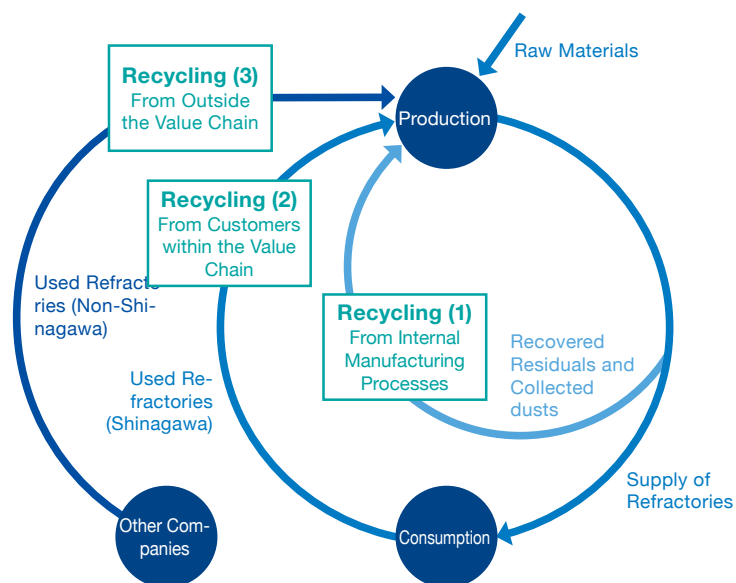
Promoting Refractory Recycling

By recycling used refractories, we help reducing CO2 emissions during raw material production and conserving mineral resources, as well as reducing environmental burden by helping our customers achieve zero emissions.

These alternative raw materials are reliably sourced, further enhancing our stable procurement of raw materials.



■ Concept of Refractory Recycling at a Shinagawa Group



Initiatives to enforce Fair Trade

Full Compliance with the Contactor Act

Shinagawa makes it mandatory for each department to have minimum one person who has finished a course on the Subcontractor Act. Finishing the course allows our employees to fully understand the concept and purpose of the Subcontractor Act, its application, obligations and prohibited acts, and to ensure them conduct fair transactions with our suppliers.

Dialogue with Suppliers

Shinagawa places great importance on direct communication through dialogue with our suppliers and regularly conduct individual interviews with them. Online interviews are also available upon request from our suppliers. Establishing mutual understanding with our suppliers and understanding their advises and suggestions through dialogue are keys for ensuring fair trade in our procurement practices.



Compliance Helpdesk for Suppliers

In order to enforce fair trade for any business transactions with our suppliers, Shinagawa has established a Compliance Helpdesk on our website that our suppliers may use anytime when they have concerns/questions about their business transactions with us. We will continue our best efforts to ensure compliance, as well as build our relationships of trust, through dialogue with our suppliers, and continue to act with fairness and integrity.

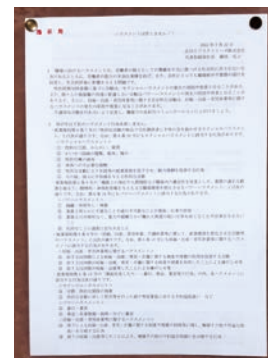
Please refer to the "Contact Us" section of our website for details. ▶ <https://www.shinagawa.co.jp/contacts/index.html>

Basic Approach to Respect for Human Rights and Ensuring a Comfortable Working Environment

In the “Shinagawa Refractories Charter of Corporate Behavior,” shinagawa declares that we respect human rights, individuality, and personality, that we never discriminate on the basis of gender, nationality, principles, physical or mental disability, or social status, that we ensure a safe and comfortable working environment for our employees, and to strive to develop the abilities of each and every employees.

Respect for Human Rights

Shinagawa is actively working to prevent harassment, which is the most common form of human rights violation. In 2013, we initiated a corporate wide campaign directly led by our President declaring Zero Tolerance for Sexual Harassment. This was evolved to declare Zero Tolerance for any harassment, including power harassment, in 2019. Our corporate top management’s approach to harassment has been clearly expressed, while we continue to provide employees training to prevent any human rights violations arising from harassment.



Human Resource Development

Shinagawa has established our Basic Human Resource Development Policy. We have been actively conducting education and training, even during COVID-19 by fully utilizing remote learning.

(1) Basic Human Resource Development Policy

Developing a workforce that is rich in diversity, highly specialized, and capable of executing plans in order to achieve Shinagawa’s sustainable growth.

Human Resource Development Goals

Workforce with:

- Creativity and a spirit of challenge, and who can identify issues and set their own goals to solve them
- Broad perspectives and a high level of expertise, and who can carry out their duties quickly with persistence
- Flexible, positive and sincere mindset to properly respond to inter-cultural communication and advances in digital technology
- Management skills to execute our strategies and achieve Shinagawa’s business goals

Proper Environment for Human Resource Development

- Respect for human rights and individuality
- Safe, secure, healthy, and comfortable workplace
- Objective and fair evaluation

■ Subject-specific textbooks and annual curriculum for in-house correspondence training

(2) Human Resource Development Initiatives

1) Education and training

i. Job-level specific training and specialized training
Throughout the year, job-level specific training is provided to supplement the management abilities and skills required of each level, and specialized training is provided to acquire the knowledge necessary for specific business execution.

ii. In-house correspondence training
Veteran employees serve as course instructors, covering a wide range of topics, including expertise in refractories, safety, quality, and compliance. This training has been offered for over a quarter century and successful completion of the program is a prerequisite for promotion,

Course	Textbook	First Semester (Oct. - Dec.)	Second Semester (Jan. - Mar.)	Third Semester (Apr. - June)	Fourth Semester (July - Sep.)
Fundamentals of Inorganic Materials	Fundamentals of Inorganic Materials	Introduction & Refractory Raw Materials (P1-P46)	Refractory Raw Materials (P46-P73)	Physics and chemistry of Refractories (P79-P117)	Physics and chemistry of Refractories (P117-P155)
Furnaces and Refractories	Refractory Journal, Revised 12th Edition	Steel Manufacturing Equipment and Refractories (I) (Primary operation including hot metal transportation and pre-treatment) (P373-P402)	Steel Manufacturing Equipment and Refractories (II) (Torpedo cars to continuous casting) (P403-P433)	Steel Manufacturing Equipment and Refractories (III) (Reheating furnaces & holding furnaces) Non-ferrous Metal Manufacturing Equipment and Refractories & Industrial Furnaces and Refractories (Glass melting furnaces) (P434-P466)	Industrial Furnaces and Refractories (Kilns for cement and lime), Incinerators and Refractories (P461-P488)
Theory of Refractories		Types and Characteristics of Refractories 1. Introduction, 2. Classification of Refractories by Chemical Composition and Characteristics of Materials 2.6 - 2.7, 2.1 - 2.5 (P127-P156)	2. Classification of Refractories by Chemical Composition and Characteristics of Materials 2.6 - 2.7, 3. Monolithic Refractories 3.1 (P157-P194)	3. Monolithic Refractories 3.2 - 3.10 (P195-P244)	4. Functional Refractories (P245-P269)
Steel Manufacturing Methods	Steel Manufacturing Methods	Iron Making	Steel Making	Secondary Refining	Continuous Casting
Fine Ceramics	Fundamental Science of Ceramics, 6th Edition	Chapter 1: Elements and Chemical Bonding / Chapter 2: Crystal Chemistry (P1-P42)	Chapter 3: Structure and Defects (P43-P77)	Chapter 4: Phase Equilibria and Reactions (P79-P110)	Chapter 5: Synthesis of Ceramics / Chapter 7: Mechanical Properties (P113-P144, P179-P195)
Furnace Engineering	Handbook of Furnace Installation Skills	Combustion Management (P158-P176)	Fundamental of Furnace Construction Knowledge (P13-P77)	Furnace Installation Drawings Management (P78-P101)	P66-P70, P127-P129, Handouts
Quality Control Management	Introduction to Quality Control Management Textbook, Revised 2nd Edition	Chapters 1-2	Chapters 3-4	Chapters 5-6	Chapters 7-9
Production Control	All You Need to Know About Production Control, Illustrated, Latest Edition	Chapters 1-2	Chapters 3-6	Chapters 7-8	Chapters 9-10
Patents	Introduction to Patents for Quality Engineers and Researchers	Chapters 1-3	Chapters 4-5	Chapters 6-8	Chapter 9
Accounting	An Introduction to Financial Statements, Revised 4th Edition Annual Securities Report for the 188th Fiscal Year	P1-P50 P1-P25	P51-P99 P26-P45	P100-P147 P46-P81	P148-P205 P82-End
Human Resources Management	Human Resources Management Basics	Chapters 1-2	Chapters 3-5	Chapters 6-8	Chapters 9-11
Compliance	Compliance Management, Illustrated, 4th Edition	Chapters 1-2 (P10-P104)	Chapter 3 (P105-P156)	Chapter 4 (P157-P206)	Chapters 5-6 (P207-P295)
Occupational Safety and Health	Occupational Safety and Health Management Essentials, 2nd Edition	Chapter 1 (P9-P60)	Chapter 2 (P61-P84)	Chapters 3-4 (P85-P144)	Chapters 5-6 (P145-P221)
Getting to Know Shinagawa Refractories	Getting to Know Shinagawa Refractories	Getting to Know Shinagawa Refractories, Parts 1-5	Getting to Know Shinagawa Refractories, Parts 6-11		Company Overviews (I) Company Overviews (II)

iii. Promoting professional qualifications.

In addition to ensuring that employees possess the official qualifications required for performing their duties, Shinagawa encourages and supports the acquisition of various professional qualifications for the purpose of improving the work capabilities of our employees, and promote self-development.

iv. Management by objectives

Shinagawa has introduced Management by Objectives for managers. By setting business goals for each employee every year and clarifying the tasks to be achieved, we identify the skills and efforts necessary to face the challenges and improve their skills and abilities. Progresses and results are evaluated by the employees and their supervisor together to ensure objective and fair evaluation.

v. Competency mapping and self-assessment

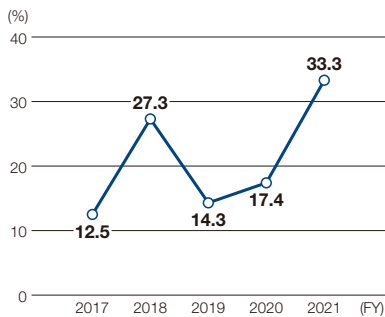
Supervisors evaluate the competence of each employee for his/her duties through in-person interviews, discuss the OJT plans and goals for the next year and the employees self-assess their progresses and decides their goal. Repeating this cycle every year allows us to increase the competence and motivation of our employees and promote efficient communication within organizations.

2) Focus on diversity recruitment

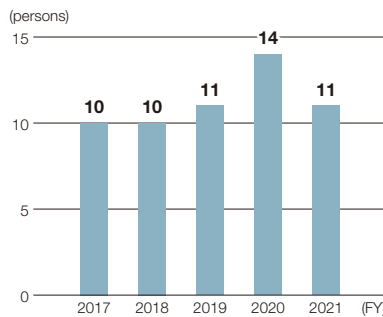
In recent years, Shinagawa has been actively implementing diversity recruiting, and the results have gradually led to the hiring of more women, foreign nationals, and people with disabilities. We will continue to focus on diversity recruitment.

Based on The Act on Promotion of Women's Participation and Advancement in the Workplace, Shinagawa has formulated our general action plan, sets a goal of maintaining a ratio of 10% or more women among new graduates hired each fiscal year for career-track positions.

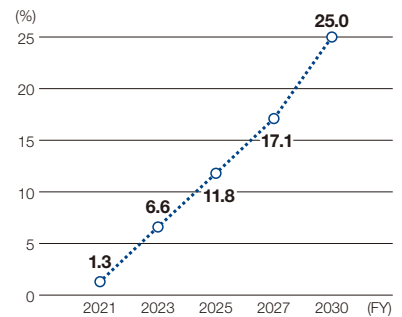
■ Ratio of women hired for career-track positions



■ Number of foreign national employees



■ Outlook for ratio of women in managerial positions



Creation of a Comfortable Work Environment

1) Supporting a better work-life balance for employees

Shinagawa strongly encourages employees to actively take annual leave. We have also established a system for half-day use of annual paid leave and a system for accumulating expired paid leave in preparation for unforeseen circumstances.

2) Introducing diverse working styles according to the situation of each employee and reduction of regular working hours

By utilizing the flextime system and work-from-home system, we are introducing diverse working styles that suit the circumstances of each employee and reduce overtime work.

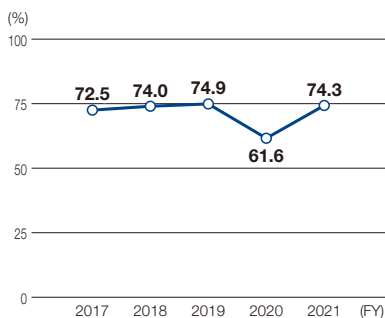
3) Maintaining and further promoting a workplace environment that makes it easy to take childcare and family care leave

Shinagawa uses internal newsletters and a portal site to ensure awareness and understanding of the system, and maintain a workplace environment that respects individuals and where employees can feel free to seek advice.

4) Employee benefits

All of our business sites are fully equipped with dormitory and company housing systems. In the Okayama area, in particular, we built a dormitory for single employees in 2022 to accommodate diversity hiring and continue to develop a foundation for employees to live in a safe and secure environment.

■ Rate of annual leave taken



Dormitory for single employees completed in March 2022

The Shinagawa Refractories Group recognizes that ensuring the health and safety of all employees is the foundation of management and a social responsibility to fulfill. Therefore, we will actively work to create a safe and comfortable workplace and promote better physical and mental health.

Slogan

Safety First: For Ourselves and Our Families

Basic Health and Safety Policy

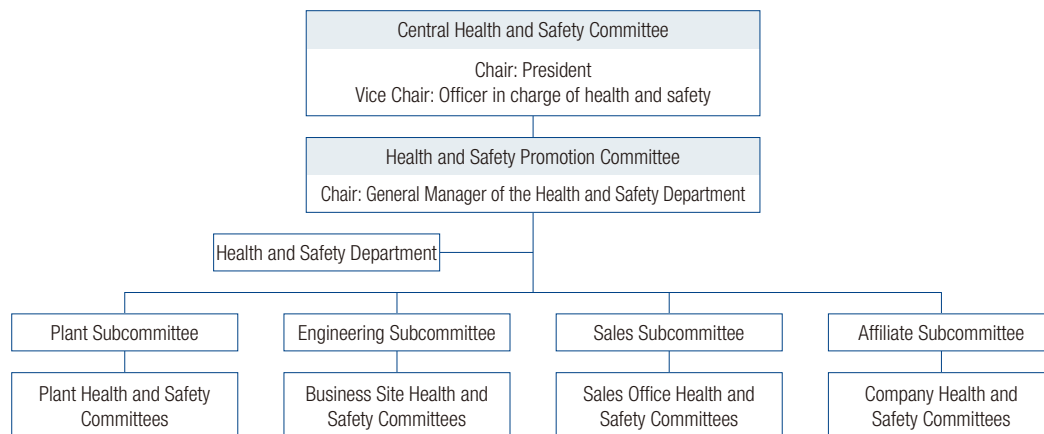
- Putting ensuring health and safety absolutely first
- Ensuring the health and safety of employees by complying with laws and regulations related to occupational safety and health as well as Shinagawa's internal standards
- Continuously engaging in activities to reduce workplace risks and ensure a safe and comfortable work environment
- Valuing transparent communication and aiming for a disciplined and open workplace with the participation of all employees

Priority Action Items

- Promoting the creation of safety-conscious personnel who follow the rules and act with heightened sensitivity to risk and danger
- Promoting intrinsic safety of equipment and operations
- Promoting sharing safety information to other business units
- Creating a safe work environment through promotion of 5S activities
- Strengthening prevention of stress-related illnesses by enhancing mental health care

Health and Safety Management System

Shinagawa created The Central Health and Safety Committee, chaired by the President, overseeing Group-wide health and safety activities. In addition, the Health and Safety Promotion Committee, chaired by the General Manager of the Health and Safety Department, plans and promotes various activities related to health and safety throughout Shinagawa Group. Furthermore, we have established Subcommittees for each division to efficiently solve health and safety management issues common to multiple business units with similar operations and functions.



Health and Safety Activities

Our health and safety activities are based on the three pillars of Health, Safety, and Disaster Prevention.

[Safety Activities]

1) Eliminating rule violations and unsafe behavior, 2) Making equipment and operations intrinsically safe (ensuring safety not reliant on human attention), 3) Sharing safety information and best practices to other departments & 4) 5S activities (sorting, setting in order, shine, standardize, sustain)

[Health Activities]

1) Preventing heat stroke, 2) Improving work environments, 3) Preventing mental illness & 4) Preventing infectious diseases

[Disaster Prevention Activities]

1) Conducting ongoing practical disaster drills & 2) Checking the status of sharing accident countermeasures across different departments

Safety Performances

The number of occupational accidents has remained almost flat since 2017. We also recognize the need to further intensify our activities as the lost time injury frequency rate (one day or more lost from work) has been 0.5 on average over the past five years, showing that lost time injuries continue to occur every year.

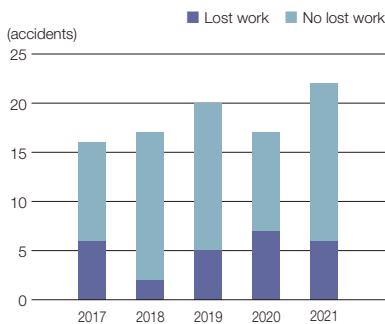
Types of accidents range from pinching and trapping, cutting and rubbing, falls, and collisions. These are mainly caused by insufficient awareness of danger and violation of rules. This year Shinagawa is focusing our efforts on the development of safety-conscious employees who follow the rules and act with a high level of risk sensitivity. We have designated the promotion of creating "safety-conscious personnel" who follow the rules and act with heightened sensitivity to danger as a priority action item.

Lost time injury frequency rate (one or more lost work day, excluding overseas affiliates)

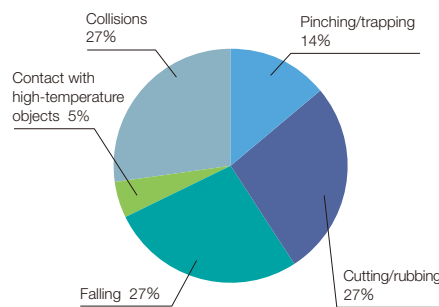
	2017	2018	2019	2020	2021
Lost time injury frequency rate	0.70	0.13	0.50	0.84	0.41

* Lost time injury frequency rate = (Accidents with one or more lost work day ÷ total work hours) × 1 million hours (2022 target: 0.4 or less)

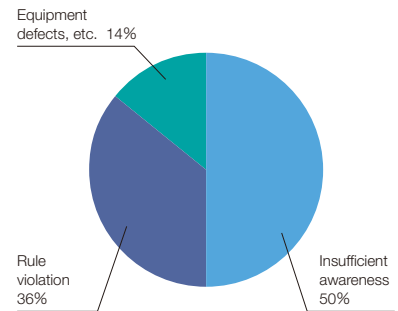
Number of occupational accidents (including those with no lost work)



Accidents by type in 2021 (including those with no lost work)



Major accident causes in 2021 (including those with no lost work)



Activity Feature

A Newly Built Hazard Simulation Training Center

As a core of our activities to create "safety-conscious personnel", we introduced a virtual reality (VR) hazard simulation system in October 2021, and about 1,000 employees have already participated in hazard simulation training using VR.

Three VR hazard simulators have been installed, one at the West Japan Works, one at the East Japan Works and the third one available for any other locations including our affiliates. In April 2022, we opened a 270 m² Hazard Simulation Training Center in the Okayama Plant of the West Japan Works. The training center is equipped with 11 types of sensory devices, including those for being caught in rotating objects, electric shock, and being trapped in air cylinders. The training room in the training center is also equipped with VR hazard simulation equipment, making it possible for trainees to take both realistic and VR training at the same time.



Exterior view of a hazard simulation training center



VR training in progress



Experience: Being caught in rotating objects

Promoting 5S Activities in the Workplace

5S competitions are held to stimulate 5S activities in the workplace. The workplace that received the 2021 Excellence Award from the Plant Subcommittee is taking action to establish a safe and comfortable workplace by fully well organizing storage areas and ensuring total separation of pedestrians and vehicles. The 5S competition in back offices have been effective in reducing paperwork and securing aisles, walkways and exits clear.



Mental Health Measures

Mental health measures have become a very important issue in ensuring the health of workers. Shinagawa asks all employees to fill out Work Stress Questionnaire regardless of the size of each business unit. Professional counselors are invited to conduct mental health training, deepening the mental health knowledge of new employees, managers, and supervisors. For those with mental disorders, we provide full support based on our "Return to Work Support Manual" to facilitate their smooth return to the workplace.

Quality Policy

Basic Policy

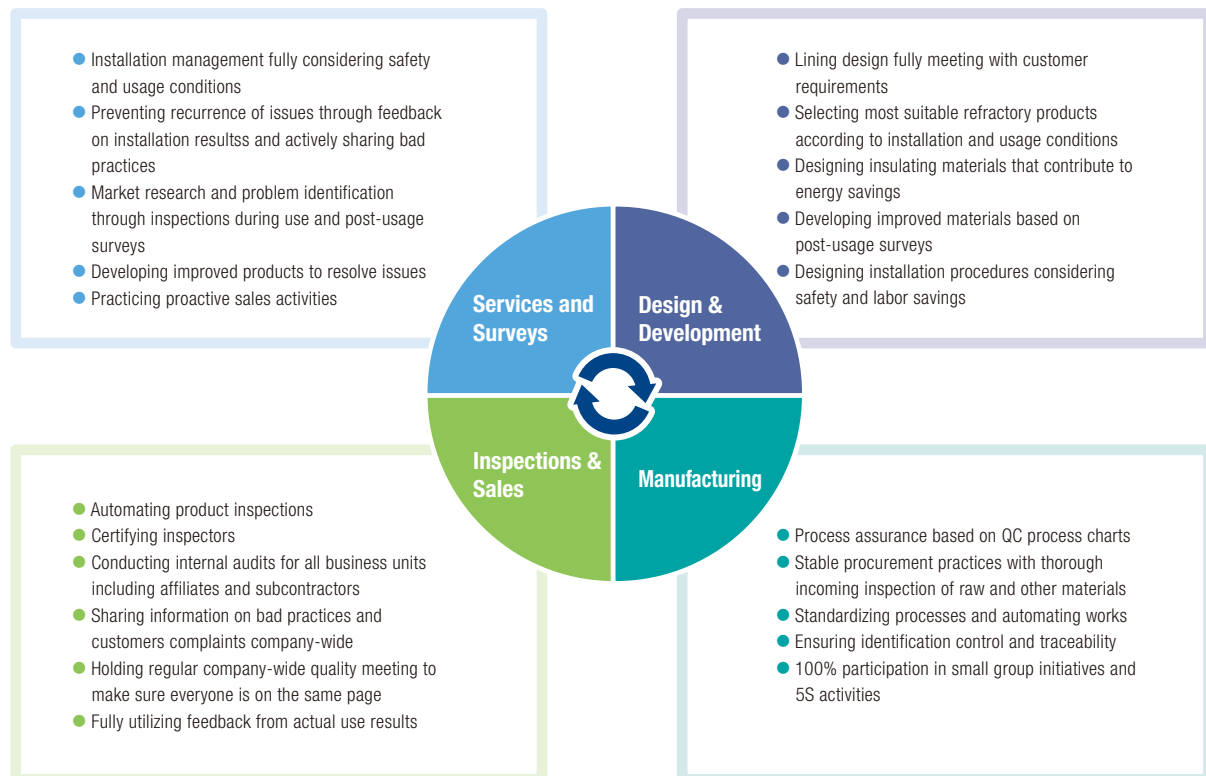
Shinagawa Refractories provides quality products and services satisfying all of our customers and contribute to the realization of a prosperous future and a sustainable society.

1. We engage in company-wide continuous improvement of quality management activities through our reliable quality assurance system.
2. We proactively work to improve the quality of our products and services, and create new value through active communication with our customers.
3. We comply with laws and regulations and contribute to the realization of a sustainable society.

Action Policy

1. We fully understand the importance and processes of quality assurance and ensure that it take place at every aspect of our business activities.
2. We engage in quality control activities with the participation of all employees through small group activities and 5S activities to build a quality-conscious workplace environment and develop proper quality mindset.
3. We share all information on product and service irregularities and customers complaints company-wide and thoroughly implement corrective measures to prevent future recurrence.
4. We place importance on understanding the actual conditions at the sites where our products and services are provided, and everyone from manufacturing, sales, R&D and installation are actively working together to make quality improvement proposals and create new value for our customers.

Main Framework of Our Quality Management Activities

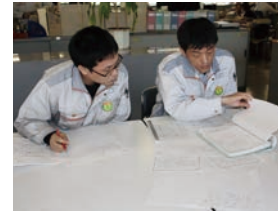


Quality Activities

Sales

The performance of refractories depends not only on the quality of the product itself, but also on the method of installation and usage conditions. Therefore, lining design and selection of proper refractories and installation methods according to the operating conditions of industrial furnaces are extremely important factors in ensuring that refractories demonstrate their quality to the customer's satisfaction.

In our sales activities, we work closely with customers to understand their on-site requirements and collaborate with our design and development teams to select the optimal lining design, materials, and installation methods. We are also promoting proactive sales and marketing activities for environmental friendly initiatives called, "ECO-GREEN (E&G) activities", including efforts to reduce CO₂ emissions by reducing heat loss as well as to recycle used bricks.



Engineering

Our engineering team provide comprehensive engineering services supporting high-temperature industries through the installation, management, repair, and diagnosis of refractory materials in all types of industrial furnaces.

Aiming for safe, accurate, economical, and on-time provision of refractory installation, we are improving our installation techniques and quality based on the Three Reality "GEN" Principles: GEN-ba (on-sites), GEN-butsum (actual products) and GEN-Jitsush (facts).

To achieve this, we conduct risk assessments, identify and correct problems as early as possible, share installation and usage results with sales, design and development, manufacturing, and quality assurance teams, and promote company-wide comprehensive quality control activities to help us achieve a strong reputation and earn trust from our customers.



Manufacturing, Procurement and Quality Management

Our production and procurement units are certified to the ISO 9001:2015/JIS Q 9001:2015 standard, registered within the scope of "Design, Development, and Manufacture of Refractory Products." In accordance with the requirements of this standard, we operate a quality management system (QMS) with the Quality Assurance Department as the secretariat.

At each manufacturing site, in addition to thorough process assurance based on QC process charts, all employees participate in ongoing efforts to improve manufacturing process reliability, productivity, safety, and environmental measures through small group activities, workplace quality meetings and 5S activities.

In addition to the automation of production equipment, we are also working to automate product inspections to prevent human error, such as in keeping records and issuing determinations, as well as to prevent falsification and fabrication of inspection data.

Furthermore, information on products and services irregularities, customer complaints and corrective actions are shared throughout the company, and quality management activities are reflected in management activities through activity reviews and quality audits by the company-wide Quality Committee.



R&D

Shinagawa designs refractories considering numerous factors and conditions such as the structure of the industrial furnace, furnace capacity, temperature fluctuations, chemical and physical properties of the ambient gases and molten and heated materials and rotation and vibration of the furnace body. In addition, recent refractories are required to be environmentally friendly, contribute to energy-saving, labor-saving and should be non-toxic. Shinagawa openly exchange information regarding these requirements across departmental boundaries, which allows us to properly and promptly reflect them in our refractories designing activities.

Since our establishment in 1875, Shinagawa has been gaining abundant experiences and technologies, including cutting-edge forecasting technologies, through installing and repairing numerous industrial furnaces. This now allows us to fully engage in design and development activities aimed at satisfying our customers from all the viewpoints, such as safety, environment friendliness, quality, delivery time, and cost.

In addition, our engineers themselves actively visit sites where our products are used, and through their own observations and communication with customers, they uncover potential needs and create new value.



Affiliates and Subcontractors

We conduct regular quality audits with the aim of continuously improving our QMS and building a trusted quality assurance system. In recent years, we have conducted quality audits of two companies in 2017, four in 2018, and one each in 2019 and 2020 to confirm their actions taken and implementation status with regard to audit findings.

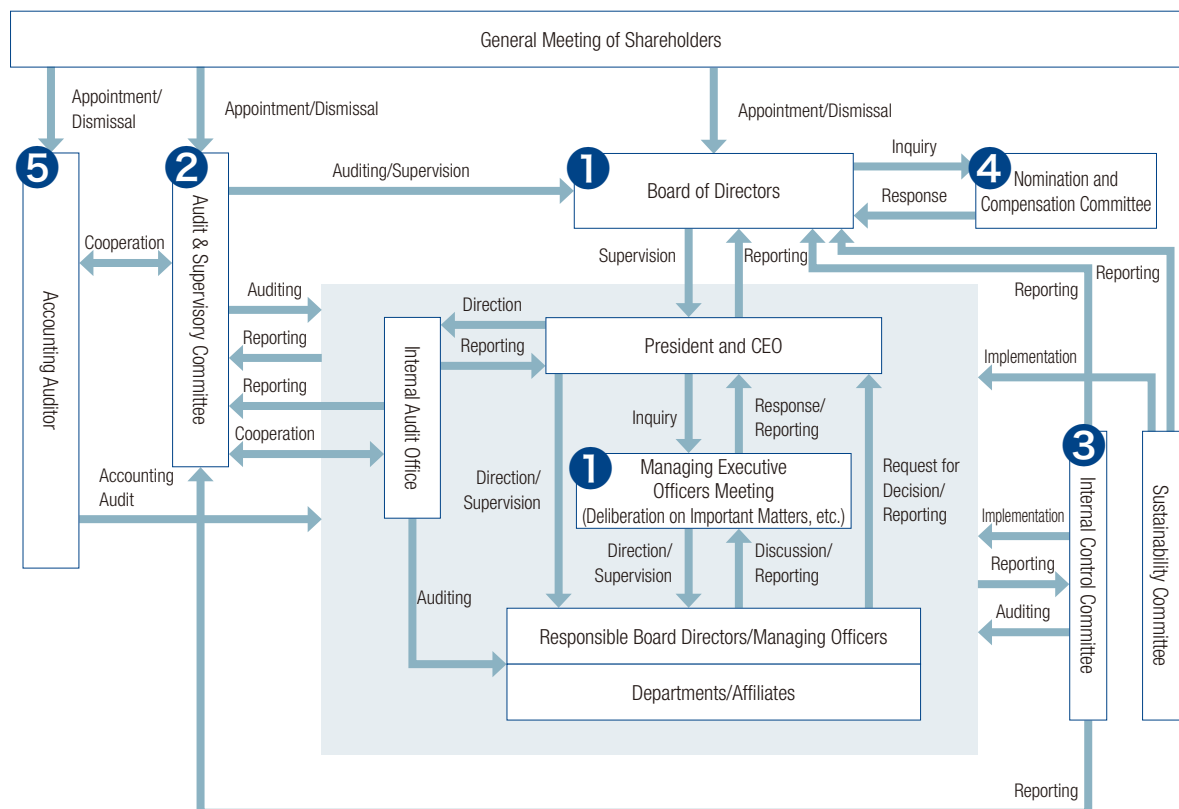


Basic Approach to Corporate Governance

In order to conduct appropriate corporate management based on our management philosophy and to further solidify the trust of all stakeholders, Shinagawa strives to strengthen and enhance our corporate governance system and operate it efficiently to ensure management transparency, fairness, efficiency, and sound management practices based on a high level of compliance awareness.

For details, please refer to the "Basic Corporate Governance Policy" section on our website (Japanese only) ▶ https://www.shinagawa.co.jp/profile/governance_guideline.html

Corporate Governance Structure Diagram



Overview of Corporate Governance Structure

In addition to the Board of Directors and the Audit and Supervisory Committee as an organization that audits and supervises business execution, Shinagawa has established the Managing Executive Officers Meeting, which consists of board directors and some managing officers, and the Managing Officers Meeting, which consists of managing officers. We hold the Board of Directors once a month, the Managing Executive Officers Meeting 1~2 times a month, and the Managing Officers Meeting four times a year. The four board directors who are members of the Audit & Supervisory Committee, including three outside board directors, audit and supervise overall management. We believe that we have a system in place that functions sufficiently in terms of management monitoring functions.

1 Board of Directors, Managing Executive Officers Meeting, Managing Officers Meeting

The Board of Directors makes important decisions regarding business execution in accordance with laws and regulations, the Articles of Incorporation, and the Rules of the Board of Directors. Other important matters are decided by the Managing Executive Officers Meeting. One board director who is a full-time Audit & Supervisory Committee member attends all of these meetings. Managing officers are appointed by the Board of Directors, executing business under the supervision of the Board of Directors and the Representative Directors, and supervise the execution of business by employees in business units under their jurisdiction.

② Audit & Supervisory Committee

Currently, we maintain an auditing and supervisory structure with four members of the Audit & Supervisory Committee, including three outside board directors, and two full-time secretariat staff to the Audit & Supervisory Committee, assisting committee members in their activities. In accordance with the audit policy established by the Audit & Supervisory Committee, Audit & Supervisory Committee members audit and supervise the execution of business by board directors by attending meetings of the Board of Directors and other important meetings, hearing reports from board directors, and inspecting important documents. In order to further enhance auditing, these members visit plants, sales offices, subsidiaries, and other organizations to investigate the status of business execution of Shinagawa and our subsidiaries. The Audit & Supervisory Committee meets once a month to receive reports about audits by each Audit & Supervisory Committee member and to discuss relevant matters.

The Audit & Supervisory Committee secretariat also works in unison with the Audit & Supervisory Committee and its members, assisting them in their activities and performing duties in accordance with the instructions of the Audit & Supervisory Committee.

③ Internal Control Committee

This committee oversees the compliance and risk management efforts of Shinagawa and our subsidiaries cross-functionally.

④ Nomination and Compensation Committee

In April 2022, Shinagawa established the Nomination and Compensation Committee, an advisory body to the Board of Directors and consisting of members selected by the Board of Directors, a majority of whom are independent outside directors. This committee was created to establish an environment for strengthening the fairness, transparency, and objectivity of procedures related to the nomination of board director candidates, board director compensation, and other matters.

⑤ Accounting Auditor

Shinagawa has appointed KPMG AZSA LLC as our accounting auditor in accordance with the Companies Act and for accounting audits in accordance with the Financial Instruments and Exchange Act.

Analysis and Evaluation of the Effectiveness of the Board of Directors

Article 3.8 of the Basic Corporate Governance Policy states, "The Board of Directors shall enhance the effectiveness of corporate governance by conducting periodic reviews to ensure that the execution of duties is in compliance with laws and regulations, the Articles of Incorporation, and these guidelines." In accordance with this, the Board of Directors Questionnaire (29 questions on a 4-point scale, with free responses and overall responses to each question) is conducted each year across four categories: **1) Composition and operation of the Board of Directors, 2) Responsibilities and roles of the Board of Directors, 3) Structure supporting the Board of Directors & 4) Relationships with stakeholders.** The average evaluation score for the questionnaire conducted in FY2021 **exceeded three points (satisfactory) for each item. The overall questionnaire scores also exceeded 3 points, at 3.55. This indicates that our Board of Directors is generally satisfied with the effectiveness of the Board of Directors as required by the Corporate Governance Code.**

	FY2017	FY2018	FY2019	FY2020	FY2021
1. Composition and operation of the Board of Directors	3.28	3.12	3.20	3.39	3.47
2. Responsibilities and roles of the Board of Directors	3.43	3.32	3.40	3.57	3.66
3. Structure supporting the Board of Directors	3.34	3.15	3.30	3.56	3.66
4. Relationships with stakeholders	3.19	3.13	3.23	3.29	3.29
Overall Average	3.34	3.20	3.30	3.47	3.55

Leadership (As of June 29, 2022)

Board Directors (Excluding Audit & Supervisory Committee Members)



President and CEO

Hiroyuki Fujiwara



Board Director,
Senior Managing Executive Officer

Toshihiko Kaneshige



Board Director,
Managing Executive Officer

Yoshikazu Kurose



Board Director,
Managing Executive Officer

Hajime Ichikawa



Board Director,
Managing Executive Officer

Masanori Ogata



Outside Board Director (Independent)

Keiko Yamahira

Major concurrent roles

- Outside Board Director, Joshin Denki Co., Ltd.
- Outside Board Director, Takara Leben Co., Ltd. (now MIRARTH HOLDINGS, Inc.)

Board Directors (Audit & Supervisory Committee Members)



Board Director, Full-time Audit & Supervisory Committee Member

Hirofumi Yamashita



Board Director, Outside Audit & Supervisory Committee Member (Independent)

Kantaro Toyoizumi

Major concurrent roles

- Outside Auditor, Nippon Life Insurance Company (now Outside Director and Audit and Supervisory Board Member)
- Outside Audit & Supervisory Board Member, San-Ai Obbli Co., Ltd.



Board Director, Outside Audit & Supervisory Committee Member (Independent)

Masanori Sato

Major concurrent roles

- Outside Auditor, Maruzen-Yushodo Co., Ltd.



Board Director, Outside Audit & Supervisory Committee Member (Independent)

Shigeru Nakajima

Major concurrent roles

- Outside Audit & Supervisory Board Member, Nissei ASB Machine Co., Ltd.

Composition of the Board of Directors (Since June 29, 2022) and Attendance at Board of Directors and Other Meetings (FY2021)

The following indicates membership of each of the Shinagawa organizations. (Chair: ⊙, Member: ○, Observer: △)

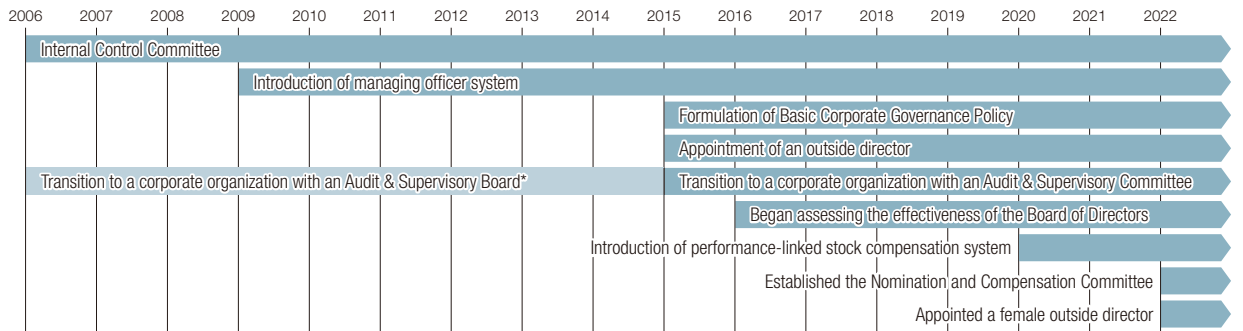
		Board of Directors	Audit & Supervisory Committee	Managing Executive Officer Meeting*	Managing Officer Meeting*	Internal Control Committee*	Nomination and Compensation Committee	Sustainability Committee*	Attendance (FY2021)	
									Board of Directors	Audit & Supervisory Committee
President and CEO	Hiroyuki Fujiwara	⊙		⊙	⊙	⊙	○	⊙	12/12	
Board Director, Senior Managing Executive Officer	Toshihiko Kaneshige	○		○	○	○		○	12/12	
Board Director, Managing Executive Officer	Yoshikazu Kurose	○		○	○	○		○	12/12	
Board Director, Managing Executive Officer	Hajime Ichikawa	○		○	○	○	○	○	12/12	
Board Director, Managing Executive Officer	Masanori Ogata	○		○	○	○		○	12/12	
Outside Board Director	Keiko Yamahira	○							— / —	
Board Director, Full-time Audit & Supervisory Committee Member	Hirofumi Yamashita	○	⊙	△	△	○		△	12/12	
Board Director, Audit & Supervisory Committee Member	Kantaro Toyozumi	○	○				⊙		10/12	12/13
Board Director, Audit & Supervisory Committee Member	Masanori Sato	○	○				○		12/12	13/13
Board Director, Audit & Supervisory Committee Member	Shigeru Nakajima	○	○				○		12/12	13/13

* Committee members also include persons designated by the President.

Skills Matrix of the Board of Directors (Since June 29, 2022)

		Corporate Management/ Strategy	Procurement	Sales/ Marketing	Manufacturing/ Installation/ R&D	Accounting/ Finance	Organizational/ HR Management	Legal Affairs/ Risk Management	Global Business	Environmental Management
		President and CEO	Hiroyuki Fujiwara	○	○				○	○
Board Director, Senior Managing Executive Officer	Toshihiko Kaneshige	○	○	○	○				○	○
Board Director, Managing Executive Officer	Yoshikazu Kurose	○		○	○					○
Board Director, Managing Executive Officer	Hajime Ichikawa	○				○			○	
Board Director, Managing Executive Officer	Masanori Ogata	○			○				○	○
Outside Board Director	Keiko Yamahira	○		○	○		○			
Board Director, Full-time Audit & Supervisory Committee Member	Hirofumi Yamashita	○				○	○		○	
Board Director, Audit & Supervisory Committee Member	Kantaro Toyozumi							○		
Board Director, Audit & Supervisory Committee Member	Masanori Sato					○				
Board Director, Audit & Supervisory Committee Member	Shigeru Nakajima							○		

Initiatives for Strengthening Governance



* Outside auditors have been appointed since the 1940s.

Internal Control Committee

The Internal Control Committee has been established to provide cross-functional oversight of Shinagawa’s compliance and risk management efforts. The Internal Control Committee, consisting of board directors, managing officers, and full-time Audit & Supervisory Committee members, oversees the promotion of compliance and risk management and audits the status of these activities as necessary, and periodically reports the results of these to the Board of Directors and the Audit & Supervisory Committee.

In addition, the Compliance Committee and Risk Management Committee have been established as subordinate organizations to the Internal Control Committee to promote the planning and execution of compliance and risk management activities.



Compliance Committee

The Compliance Committee, which is composed of board directors and some managing officers, is responsible for planning and executing various compliance-related activities. The major activities of the Compliance Committee are as follows.

(Major activities)

- **Publication of articles in company newsletters**

Compliance-related articles (with attorney’s comments) on various themes are published in each issue of the company newsletter (published bimonthly). Topics have included the



Compliance articles in our company newsletter

Annual Compliance Action Plan

Item	April	May	June	July	August
Compliance Committee Activities					● Compliance Committee First half activity reporting (Interim)
Ad-hoc: Compliance incident occurs → Reported to Compliance Committee → Reported to Internal Control Committee → Company-wide information sharing (awareness-raising and education)					
Education	1) Compliance Awareness Month				
	2) Company newsletters	● Previous fiscal year reporting		● Eliminating high-risk incidents/education (1)	● Eliminating high-risk incidents/education (2)
	3) Various job-specific training				
	New employee training	● Power harassment, Working hours			
	Internal correspondence education				
Manager training (including affiliates and subcontractors)					

amended Whistleblower Protection Act, automobile safe driving management regulations, insider trading, the Antitrust Law, and working hour management. The Q&A format makes it easy to read, and it is also intended to be used as training materials.

● **Various training programs**

- In-house correspondence education: Mainly taken by younger employees and required for promotion. Employees study on their own using textbooks and work on assignments prepared by in-house instructors.
- Compliance Awareness Month: Held in December every year, we set a specific theme each time, distribute related materials, and conduct training at each business site. The planned theme for FY2022 is working hour management.
- Sharing Compliance Case Studies: Incidents of compliance violations are shared company-wide at each business unit to prevent the recurrence of similar cases.
- E-learning: Shinagawa introduced e-learning in FY2021, including at affiliates. E-learning in FY2022 is planned to cover the topics of whistle blowing and working hour management.

● **Compliance questionnaires**

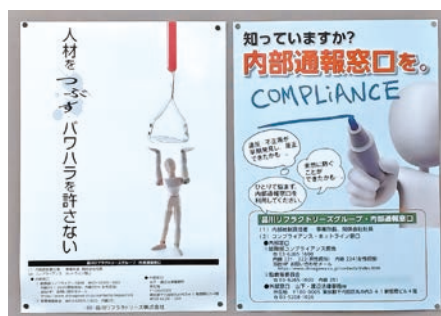
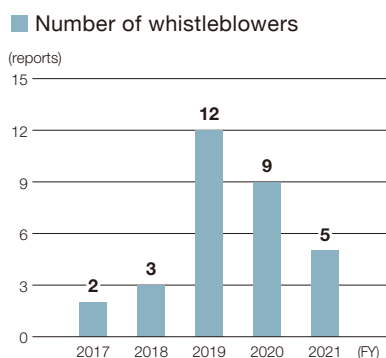
Questionnaires have been distributed in 2018, 2020, and 2021 for compliance-related awareness for all employees including those of affiliates and subcontractors. The results are reported to the Board of Directors and also published in the company newsletter.

● **Preventing Harassment**

In 2019, we issued a document in the name of the president, “We will not tolerate any harassment!” to clarify Shinagawa’s zero tolerance policy for any harassment.

● **Compliance Hotline**

Internal and external contacts (Legal Counsel) have been established for all workers, including our affiliates, and subcontractors. Whistleblowers may choose to report anonymously anytime. We disseminate information about the Compliance Hotline by providing information in the company newsletter and displaying posters. In July 2022, Shinagawa revised its internal reporting regulations to comply with the amended Whistleblower Protection Act.



Compliance posters displayed at each business unit.

September	October	November	December	January	February	March
(Internal Control Committee First half activity reporting (Final))				● Next year plan drafting	● Compliance Committee Second half/full-year activity reporting (Interim), Next year plan review	(Internal Control Committee Second half/full-year activity reporting (Final), Next year plan reporting)
Ad-hoc: Compliance incident occurs → Reported to Compliance Committee → Reported to Internal Control Committee → Company-wide information sharing (awareness-raising and education)						
			● Compliance Awareness Month			
	● Eliminating high-risk incidents/education (3)		● Eliminating high-risk incidents/education (4)		● Eliminating high-risk incidents/education (5)	
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● E-learning or on-site training (1)			● E-learning or on-site training (2)			

Risk Management

1. Overview

As Shinagawa engages sustainable growth and corporate value creation through our business activities, there are various risks that may impede them. In response to these risks, we are engaged in activities to prevent and mitigate potential risks and minimize the negative impact when they materialize (risk management) based on the Basic Risk Management Policy.

Each department identifies potential risks and evaluates countermeasures in accordance with the Risk Management Regulations. The Risk Management Committee examines them, followed by review and audit at the Internal Control Committee chaired by the President, which deliberates and decides on future response policies. The Board of Directors receives reports on risk management from the Internal Control Committee and conducts management reviews to implement proper risk management.

Among all potential risks, we have specifically established the following plans that lay out procedures to follow in case of an internal business crisis due to natural disasters, fire, terrorism and outbreaks of infectious diseases.

(1) Emergency Response Plan (ERP)

Defines procedures for carrying out initial responses to natural disasters such as major earthquakes, windstorms and floods, and other emergencies such as fires, with a basic policy to (1) protect human life, (2) reduce losses, and (3) improve creditworthiness.

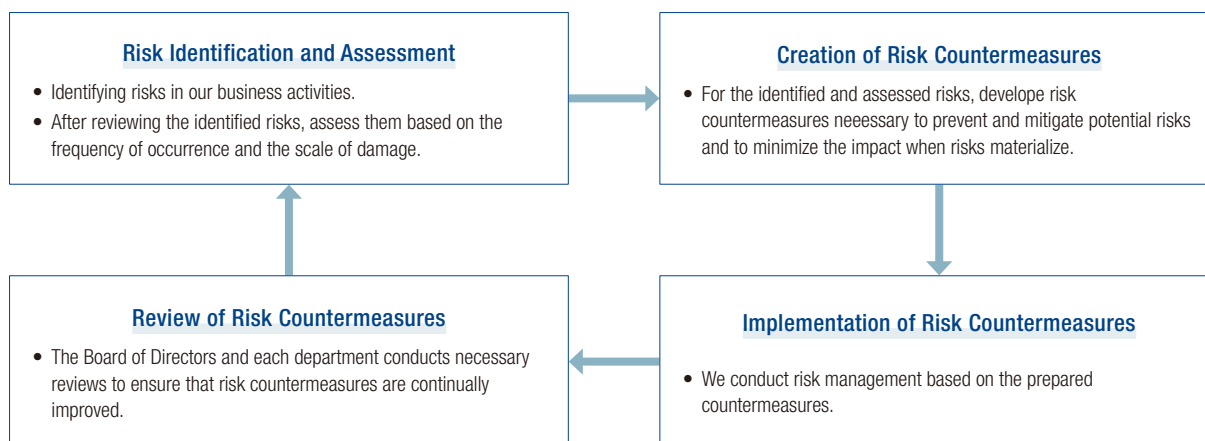
(2) Crisis Management Plan (CMP)

Defines specific measures to be taken in the event of a business crisis such as natural disasters, fires, terrorism, and outbreaks of infectious diseases, until the crisis is resolved.

(3) Business Continuity Plan (BCP)

Defines specific procedures to be followed when Shinagawa is faced with a situation that requires maintaining business continuity.

In addition to the above plans, we regularly conduct contingency response drills among multiple business sites and disaster prevention drills at each business site to ensure that actions against contingency risks are firmly established.



2. Status of Risk Management Activities in FY2021

1) Risk Identification and Assessment

In accordance with the Risk Management Regulations, 67 risks were identified in FY2021 and assessed and categorized into one of three levels according to the status of proposed countermeasures.

Assessment Level 1 (countermeasures are in place and regulations have been established) : 59 items

Assessment Level 2 (countermeasures exist but are insufficient) : 8 items

Assessment Level 3 (no countermeasures) : 0 items

The main items with a Level 2 assessment are safety, quality, labor management and energy conservation. With the aim of raising these items to Level 1, we are focusing on the development of countermeasures and regulations.

2) Conducting Contingency Response Drills (BCP initiatives)

Contingency response drills were conducted in November 2021 on the assumption of damage from a large-scale earthquake with an epicenter off the Sanriku Coast. The following is an overview of these drills.

[Drill Objective]

- (1) Verification of the crisis management system in the initial response and business continuity response.
- (2) Identification of issues to address in connection with potential problems/matters arising during a crisis and consideration of improvement measures to enhance response capabilities.
- (3) Trial run and function verification for information gathering and sharing tools in times of crisis.

[Drill Contents]

(1) Initial response drill

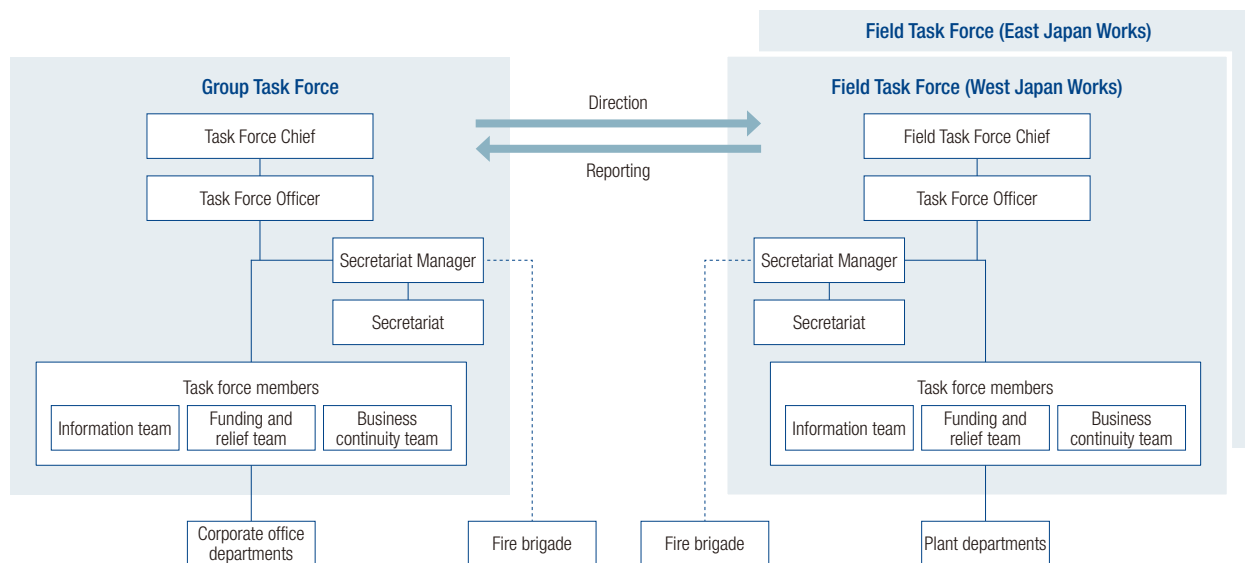
Starting with launching a task force following a major earthquake, the drill simulates the action process for task force by providing the headquarters with information on the disaster situation and internal damage on the day of the earthquake and the following day.

(2) BCP coordination drill

Questions are presented to the participants on their decisions, judgments, and actions regarding the business continuity of important operations from the perspective of mutual cooperation and complementary operation among business sites after a major earthquake. These participants are divided into small groups and given a short period of time to discuss their response and present the results of their considerations.

Through this drill, participants set priorities for the task force's activities, such as collecting and reporting information on the state of damage and issuing instructions to each location, and successfully carried out support for the affected areas, recovery procedures, and sharing information to stakeholders in an appropriate manner. However, issues arose requiring consideration, including uneven burden of tasks on certain groups within the task force and the lack of effective use of information collection and sharing tools. We will focus on rectifying these points by reviewing our ERP, CMP, and BCP plans and preparing for the next drill.

Task Force Structure



Photos from the drill



Group Disaster Task Force (Corporate Office)



Field Disaster Task Force (East Japan Works)

Message from the Board Directors

Supporting Shinagawa Refractories to continue to grow and create new values for industries and societies around the world

We are further enhancing our corporate governance system by strengthening the supervisory function of the Board of Directors through the audit and supervision of the Audit & Supervisory Committee, the majority of which is outside board directors. As of June 29, 2022, the Company has 10 board directors, of which four were members of the Audit & Supervisory Committee. There is a total of four outside board directors, three of which are members of the Audit & Supervisory Committee.

Here, we present messages of five members of the Board Directors from their unique viewpoints: Keiko Yamahira, the only outside non-Audit & Supervisory Committee member, as well as the four members of the Audit & Supervisory Committee: Hirofumi Yamashita, Kantaro Toyozumi, Masanori Sato, and Shigeru Nakajima.



Outside Board Director
(Independent)

Keiko Yamahira

I was appointed as an outside board director of Shinagawa Refractories in June 2022. My past management experience includes the construction and real estate businesses. In corporate management, departing from the status quo and taking on new challenges are essential for a company's survival and growth, especially in Japan, where industries have matured and the population is aging with a declining birthrate. We are a company with a history of nearly 150 years supporting social infrastructure, but I believe that we should not just rest on the laurels afforded us by our illustrious history. Rather, we read the changes in the times and continue to challenge ourselves and evolve in all areas, including product technologies, production processes, product domains, and expanding the areas where we do business.

People have taken greater notice of ESG initiatives in corporate activities in recent years. We need to be fully aware that these initiatives are expected to expand further. I look forward to working with the Board of Directors to fulfill my responsibilities as an outside board director from a comprehensive and objective perspective, including the enhancement of our corporate value, global and social sustainability, and the impact on our stakeholders, and to play a role in the further growth of Shinagawa Refractories.



Board Director, Full-time Audit & Supervisory
Committee Member

Hirofumi Yamashita

I was appointed as a full-time Audit & Supervisory Committee Member at the 2022 General Meeting of Shareholders. Until then, I had served as a board director in charge of business execution, mainly in charge of the Corporate Planning Department, the Information Systems Department, and our Overseas Business Division. Though my position has changed, I believe that I maintain the same responsibilities to fulfill for the healthy and sustainable growth of Shinagawa Refractories. As a full-time Audit & Supervisory Committee Member, I will have more opportunities to communicate with each internal board director and department, and will actively contribute as an Audit & Supervisory Committee Member based on the expert opinions of the three outside members of the committee.

Shinagawa has been in business for 147 years, but we now are in a time of dramatic change, and required to accelerate our efforts toward ESG management, including with respect to the SDGs. In order for these tasks to take root, it is extremely important to ensure the soundness of the system that promotes them and to spread awareness among employees. I would continue to carry out auditing activities using my own perspective and play a part in Shinagawa Refractories' contribution to our shareholders and to society at large.



Board Director, Outside Audit & Supervisory
Committee Member (Independent)

Kantaro Toyozumi

After serving as an outside auditor for years, I now perform my duties as an outside board director and Audit & Supervisory Committee Member since 2016. During my time as an auditor, I posed questions and expressed my opinions exclusively on the topic of legality. Since becoming an Audit & Supervisory Committee Member and board director, I now pose questions, provide opinions, and exercise voting rights regarding agenda items on the topics of not only legality but also the rationality and appropriateness of management matters. I originally did not possess experience in management, but my judgment is always based on the social role and expectations on a corporation that I have learned as an outside board director and legal advisor to other companies.

Shinagawa Refractories has a long history and a sound, earnest corporate culture, elements that should be respected going forward. However, we are also required to respond to international demands with regard to such as the global environment and ensuring diversity. Here, I will confirm our actions from these perspectives, such as cooperating to reduce CO2 emissions not only at our manufacturing stage but also at our customers sites. At the same time, I would like to consider what we can do to increase awareness of Shinagawa in light of the issue we face of how to secure excellent talents amid the continuing decline in the population.



Board Director, Outside Audit & Supervisory
Committee Member (Independent)

Masanori Sato

Shinagawa Refractories is a long-lived company, with a history of nearly 150 years since our founding.

Since our main line of business is refractory bricks for steel industry, we have been walking the same path of growth alongside the steel industry in Japan. In recent years, however, extreme climate change and racial and human rights issues have become global issues, and companies have been challenged for their survival and value from the perspective of ESG investment and SDGs promotion. In other words, all companies must become the “company of choice” for a wide range of stakeholders, including not only investors and business partners, but also local communities and employees. That is why we issue this report on sustainability to openly provide information on our management policies and strategies, technological development, human resource development, environmental initiatives, and our strengths to society at large.

At the same time, as we enter into the new phase of our company's development, it is expected that this report will be shared with everyone at Shinagawa all over the world, put into practice as a code of conduct, and lead to the cultivation of a new organizational culture.



Board Director, Outside Audit & Supervisory
Committee Member (Independent)

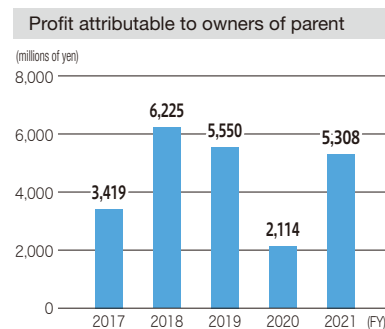
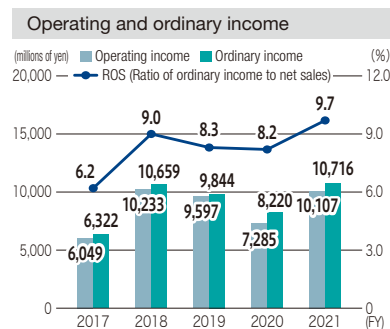
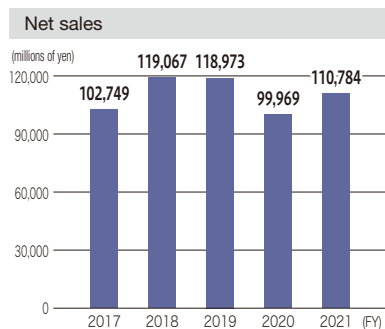
Shigeru Nakajima

My name is Shigeru Nakajima, and I am a Board Director and Audit & Supervisory Committee Member. I always carefully observe the situation of Shinagawa and provide as much advice as possible at the Board of Directors meetings about the issues to be addressed and the direction in which we should move forward. Whenever I review Shinagawa Refractories, I always feel the strong passion for technological development, the high quality of our products and the sincerity of the people who work here. The workmanship demonstrated at our plants and the efforts made in our R&D are very impressive.

The world is undergoing a major shift to an era of ESG (Environmental, Social, and Governance), and we are eagerly addressing these new issues. What I expect from Shinagawa now is to make people aware of our efforts here. The word “refractories” alone really does not mean that much to the world. I would like Shinagawa to make all efforts to explain its importance to society in an easy-to-understand manner, for example, “bricks that can withstand high temperatures and that are used in blast furnaces.” Because we are at a turning point in the times, it is very important to let not just to people in the industries but to general public know about the importance we are doing for the society.

Operating Results

- 10.8% increase in net sales, mainly due to an increase in the sales volume of refractories resulting from an increase in domestic crude steel production
- Significant increases in both operating income and ordinary income
- Profit attributable to owners of parent increased 151.1% (an impairment loss of 3.3 billion JPY was recorded in the previous period)

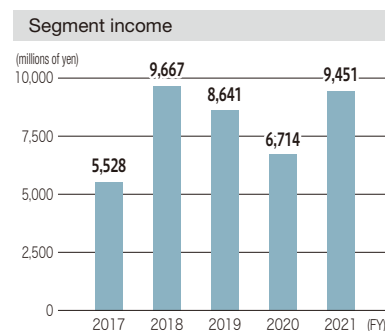
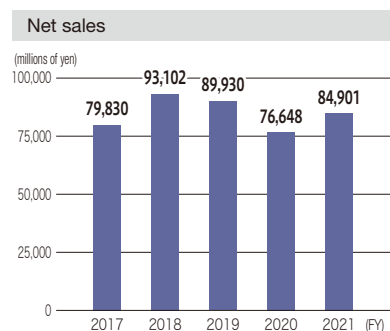


<By Business Segment>

Refractories

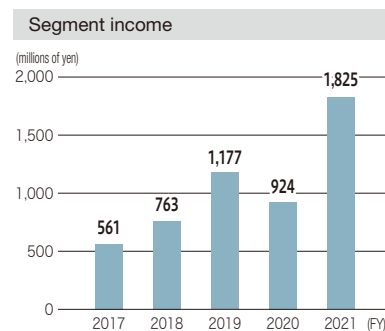
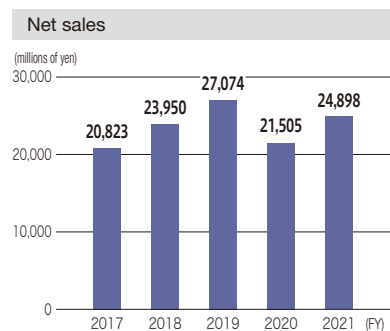
An increase in crude steel production in Japan mainly led to an increase in our refractory sales volume, which resulted in net sales for the period increased 8,252 million JPY (10.8%) to 84,901 million JPY and segment income increased 2,737 million JPY (40.8%) to 9,451 million JPY.

An increase in crude steel production in Japan mainly led to an increase in our refractory sales volume, which resulted in net sales for the period increased 8,252 million JPY (10.8%) to 84,901 million JPY and segment income increased 2,737 million JPY (40.8%) to 9,451 million JPY.



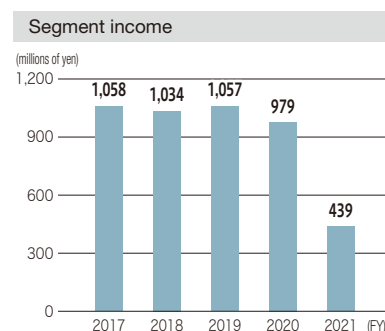
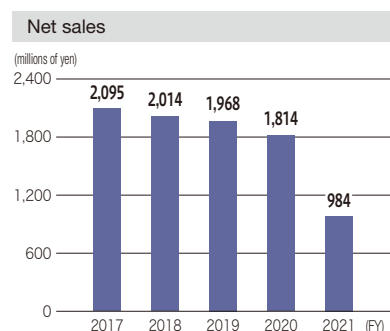
Engineering

Due to an increase in construction work at steelworks, net sales for the period increased 3,392 million JPY (15.8%) to 24,898 million JPY and segment income increased 900 million JPY (97.4%) to 1,825 million JPY.



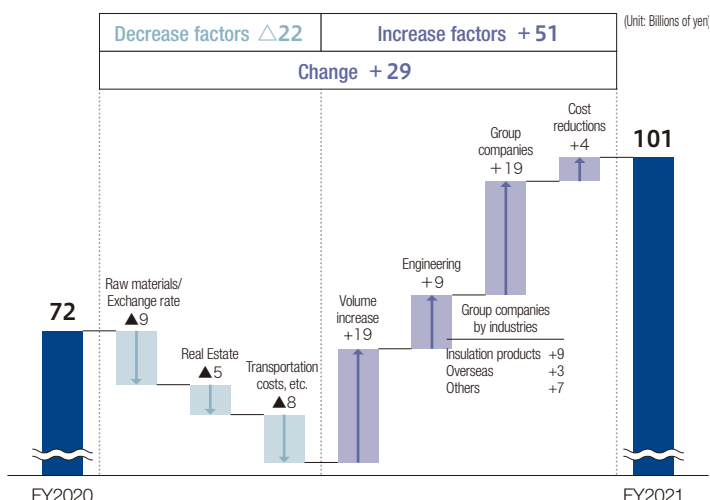
Real Estate

Due to the termination of lease contracts for some properties, net sales for the period declined 830 million JPY (45.8%) to 984 million JPY and segment income decreased 539 million JPY (55.1%) to 439 million JPY.



<Change Factors (vs. Previous Period)>

Operating income for FY2021 was 10.1 billion JPY compared to 7.2 billion JPY for FY2020, an increase of 2.9 billion JPY. A total of 2.2 billion JPY was affected by rising prices for refractory raw materials since the latter half of FY2020 and the significant depreciation of the JPY in the exchange rate toward the end of the period, as well as the decrease in real estate sales. On the other hand, the increase in refractory products sales volume and engineering sales, as well as strong sales in the insulation and other businesses at our group companies, had a total impact of 5.1 billion JPY on revenue growth.



Financials

<Assets>

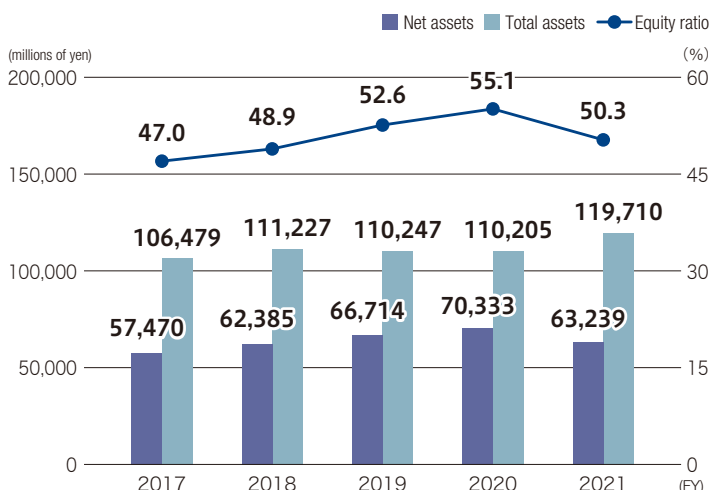
Assets increased by 9,504 million JPY from the end of the previous period to 119,710 million JPY, mainly due to an increase in cash and deposits and notes, accounts receivable and contract assets.

<Liabilities>

Liabilities increased 16,598 million JPY from the end of the previous period to 56,470 million JPY, mainly due to an increase in long-term borrowings.

<Net Assets>

Net assets decreased 7,094 million JPY from the end of the previous period to 63,239 million JPY, mainly due to decreases in capital surplus and non-controlling interest.



Cash Flows

Cash and cash equivalents ("cash") at the end of the period increased 1,198 million JPY from the end of the previous period to 16,763 million JPY. The status of each cash flow and their changing factors during the period are as follows.

<Cash Flows from Operating Activities>

Net cash earned by operating activities amounted to 9,494 million JPY (up 1.8% year-on-year). This was mainly due to income before income taxes and minority interests of 9,413 million JPY.

<Cash Flows from Investing Activities>

Net cash used in investing activities amounted to 5,166 million JPY (up 28.9% year-on-year). This was mainly due to payments for purchase of property, plant and equipment of 3,208 million JPY and refund of guarantee deposits received of 1,509 million JPY.

<Cash Flows from Financing Activities>

Net cash used in financing activities amounted to 3,348 million JPY (up 38.8% year-on-year). This was mainly due to proceeds from long-term borrowings of 12,400 million JPY, purchase of shares of subsidiaries not resulting in change in scope of consolidation of 10,408 million JPY, repayments of long-term borrowings of 2,799 million JPY, and dividends paid of 1,495 million JPY.

	(FY)	2011	2012	2013	2014
Financial Information					
Consolidated Operating Results					
Net Sales	(millions of yen)	103,038	99,204	96,875	100,188
Operating Income	(millions of yen)	6,000	4,770	3,934	4,895
Ordinary Income	(millions of yen)	5,864	5,154	4,160	5,215
Profit attributable to Owners of Parent	(millions of yen)	1,998	2,576	2,224	3,098
Capital Expenditures	(millions of yen)	1,902	2,278	2,057	1,918
Depreciation	(millions of yen)	3,073	2,520	2,464	2,493
R&D Expenses	(millions of yen)	1,006	967	933	870
Consolidated Financial Condition					
Total Assets	(millions of yen)	106,489	106,681	106,869	109,841
Net Assets	(millions of yen)	38,608	42,847	45,257	51,042
Interest-bearing Debt	(millions of yen)	31,382	29,552	25,189	22,108
Per Share Information (Consolidated)					
Earnings per Share	(yen/share)	21.20	27.33	23.59	32.87
Net Assets per Share	(yen/share)	362.24	402.73	422.49	478.95
Consolidated Cash Flows					
Cash Flows from Operating Activities	(millions of yen)	3,954	6,064	6,873	4,448
Cash Flows from Investing Activities	(millions of yen)	△1,967	△2,808	△1,180	129
Cash Flows from Financing Activities	(millions of yen)	△5,085	△2,707	△5,121	△3,730
Cash and Cash equivalents at End of the Period	(millions of yen)	9,480	10,153	10,942	11,908
Dividends					
Dividend Payout Ratio (Consolidated)	(%)	23.6	18.3	21.2	18.3
Annual Dividends	(yen/share)	5.0	5.0	5.0	6.0
Major Management Indicators					
ROS (Ratio of ordinary income to net sales)	(%)	5.7	5.2	4.3	5.2
ROE (Return on equity)	(%)	5.9	7.1	5.7	7.3
D/E ratio (Debt-to-equity ratio)	(times)	0.9	0.8	0.6	0.5
Equity Ratio	(%)	32.1	35.6	37.3	41.1
Other					
Share Price at End of the Period	(yen)	225	200	209	292
Number of Consolidated Employees	(persons)	2,845	2,821	2,768	2,751
Number of Consolidated Subsidiaries	(companies)	28	27	27	27

* Effective October 1, 2017, the Company conducted a reverse stock split at a ratio of 1 share per 10 shares of common stock. Earnings per share, net assets per share, and annual dividends are calculated assuming that the reverse stock split took place at the beginning of the fiscal year ended March 2018.

2015	2016	2017	2018	2019	2020	2021
97,889	103,722	102,749	119,067	118,973	99,969	110,784
5,019	6,344	6,049	10,233	9,597	7,285	10,107
4,951	6,365	6,322	10,659	9,844	8,220	10,716
2,796	3,602	3,419	6,225	5,550	2,114	5,308
1,703	3,006	2,003	2,849	4,968	3,426	4,417
2,453	2,400	2,330	2,344	2,538	2,581	2,684
980	992	1,007	1,022	1,153	1,151	1,244
103,697	106,507	106,479	111,227	110,247	110,205	119,710
50,132	54,186	57,470	62,385	66,714	70,333	63,239
20,399	18,526	16,700	15,688	14,745	13,682	22,854
29.67	38.21	364.90	666.68	594.37	226.29	567.82
468.80	505.68	5,354.09	5,825.89	6,211.92	6,492.30	6,434.59
4,390	5,459	1,578	4,288	7,769	9,327	9,494
△1,173	△1,825	△1,623	△1,179	△3,840	△4,006	△5,166
△2,343	△2,526	△3,011	△2,286	△2,549	△2,411	△3,348
12,659	13,627	10,620	11,347	12,669	15,564	16,763
20.2	18.3	21.9	20.2	21.9	48.6	33.5
6.0	7.0	80.0	135.0	130.0	110.0	190.0
5.1	6.1	6.2	9.0	8.3	8.2	9.7
6.3	7.8	7.0	11.9	9.9	3.6	8.8
0.5	0.4	0.3	0.3	0.3	0.2	0.4
42.6	44.8	47.0	48.9	52.6	55.1	50.3
201	303	2,794	3,135	2,215	2,884	3,795
2,839	2,786	2,805	2,847	2,876	2,836	2,817
26	25	23	22	22	20	21

■ Company Profile (as of September 30, 2022)

Company Name	SHINAGAWA REFRACTORIES CO., LTD.
Representative	Hiroyuki Fujiwara, President and CEO
Founded (Business)	1875
Founded (Incorporated)	June 25, 1903
Capital	3.3 billion JPY
Business Lines	Manufacturing and sale of refractories, design and installation of industrial furnaces, sale of fine ceramics and others.
Number of Employees	Consolidated: 2,982 Non-consolidated: 1,242
Corporate Office	Shin-Otemachi Building 8F, 2-2-1 Otemachi, Chiyoda-ku, Tokyo 100-0004, Japan TEL. +81-3-6265-1600 FAX. +81-3-6265-1616

■ Status of Shares (as of September 30, 2022)

Total number of authorized shares	37,700 thousand shares
Total number of issued shares	9,429 thousand shares
Number of shareholders	5,443

■ Major Shareholders (as of September 30, 2022)

Shareholder names	Number of shares held (thousand shares)	Ratio of shares held (%)
JFE Steel Corporation	3,181	34.0
The Master Trust Bank of Japan, Ltd. (trust account)	687	7.3
Kobe Steel, Ltd.	352	3.8
Sumitomo Mitsui Trust Bank, Limited	326	3.5
Custody Bank of Japan, Ltd. (trust account)	225	2.4
Fukoku Mutual Life Insurance Company	200	2.1
Okayama SS Society	190	2.0
Mizuho Bank, Ltd.	170	1.8
Sumitomo Mitsui Banking Corporation	150	1.6
Shinagawa Refractories Employee Shareholding Association	146	1.6

(Note) Shareholding ratio is calculated excluding treasury shares (72 thousand shares).

■ Corporate Officers (as of October 31, 2022)

President and CEO	Hiroyuki Fujiwara
Board Director, Senior Managing Executive Officer	Toshihiko Kaneshige
Board Directors, Managing Executive Officer	Yoshikazu Kurose Hajime Ichikawa Masanori Ogata
Outside Board Director	Keiko Yamahira
Board Director, Audit & Supervisory Committee Member	Hirofumi Yamashita
Board Directors, Outside Audit & Supervisory Committee Member	Kantaro Toyoizumi Masanori Sato Shigeru Nakajima
Managing Executive Officers	Michihiro Kuwayama Heiki Miki Yoshio Fukusaki Yoshinori Tsuchiya Hidenori Tada Hitoyoshi Kinoshita
Managing Officers	Masayuki Negishi Shigeo Taniguchi Yoichi Amano Yoichi Takahashi Makoto Namba Hirohide Uehara Masakazu Iida Takayuki Shimoyama Takuya Fujita

■ Notes for Shareholders (as of September 30, 2022)

Fiscal year	From April 1 to March 31 of the following year
Ordinary General Meeting of Shareholders	Held in June
Date of Record	Ordinary General Meeting of Shareholders March 31 Year-end dividends March 31 Interim dividends September 30 Any additional dates, if necessary, as set in advance by public notice
Administrator of Shareholders' Register and Account Management Institution for Special Accounts	4-1, Marunouchi 1-chome, Chiyoda-ku, Tokyo, Japan Sumitomo Mitsui Trust Bank, Limited
Administrator of Shareholders' Register	4-1, Marunouchi 1-chome, Chiyoda-ku, Tokyo, Japan Sumitomo Mitsui Trust Bank, Limited Transfer Agent Department
Mailing Address	2-8-4 Izumi, Suginami-ku, 168-0063 Tokyo Sumitomo Mitsui Trust Bank, Limited Transfer Agent Department
Phone Inquiries	+81-120-782-031
Website URL:	https://www.smtb.jp/personal/procedure/agency/ (Japanese only)
Method of Public Notice	Public notices are posted on Shinagawa's homepage. https://www.shinagawa.co.jp/

■ Japan (as of October 31, 2022)

[Consolidated subsidiaries]

Ceratechno Co., Ltd.

5-11-70 Kasaki, Akashi, Hyogo 673-0037
TEL. +81-78-923-8678

Shinagawa Roko Co., Ltd.

1 Kokan, Fukuyama, Hiroshima 721-0931
(at JFE Steel Corporation site)
TEL. +81-84-941-1504

Shinagawa General Co., Ltd.

88 Higashi-katakami, Bizen, Okayama 705-8615
TEL. +81-869-64-3701

Shinagawa Fine Ceramics Co., Ltd.

707 Imbe, Bizen, Okayama 705-0001
TEL. +81-869-64-2221

Isolite Insulating Products Co., Ltd.

8th floor, Nakanoshima Dai Building, 3-3-23 Nakanoshima, Kita,
Osaka 530-6108
TEL. +81-6-7711-5801

Isolite Kenzai Co., Ltd.

570, Okuharamachi-shimo Nanao, Ishikawa 926-0174
TEL. +81-767-62-2336

■ International (as of October 31, 2022)

[Consolidated subsidiaries]

Shinagawa Refractories Australasia Pty.Ltd. (Australia) [SRA]

23 Glastonbury Av., Unanderra, NSW 2526 Australia
TEL. +61-2-4221-1700

Shinagawa Refractories Australasia New Zealand Ltd. (New Zealand) [SRA-NZ]

24 Rayner Road, Huntly 3740, New Zealand
TEL. +64-7-828-7019

PT Shinagawa Refractories Indonesia (Indonesia) [SRI]

Jl.Tiang Bendera 3 no52/10RT 007/RW003, Roa Malaka, kec
Tambaro, West Jakarta 11230, Indonesia
TEL. +62-21-2269-3011

Shinagawa Advanced Materials Americas Inc. (United States) [SAM]

3555 Gilchrist Rd., Mogadore, OH 44260 U.S.A.
TEL. +1-330-628-1118

SG Shinagawa Refractories India Pvt. Ltd. (India) [SGSR]

389350 Taluka, Halol District, Panchmahal, Gujarat, India
TEL. +91-79-4003-9901

Shenyang Shinagawa Metallurgy Materials Co., Ltd. (China)

Santai, Laobianxiang, Yuhong, Shenyang, Liaoning 110146,
China
TEL. +86-24-8926-0601

Liaoning Shinagawa Hefeng Metallurgical Material Co., Ltd. (China)

Baoancun, Tengao, Anshan, Liaoning 114225, China
TEL. +86-412-838-8055

Shinagawa Refractories Korea Corporation (South Korea) [SRK]

205 Jungheung-ro, Buk-gu, Pohang-si, Gyeongsangbuk-do, the
Republic of Korea

Suzhou Isolite Eastern Union Ceramic Fiber Co., Ltd. (China) [SIE]

52 Zijin Road, Suzhou New District, Suzhou, Jiangsu Province,
215129, China
TEL. +86-512-6807-8501

Isolite Insulating Firebrick Sdn. Bhd. (Malaysia) [IIF]

Lot 1, Batu 10, Jalan Jelapang-Chemor, Perak Ceramic Industrial
Park, 31200 Chemor, Perak, Malaysia
TEL. +60-5-201-2187

Isolite Eastern Union Refractories Co., Ltd. (Taiwan) [IER]

No.93, Ruifang Industrial Park, Dingping Road, Ruifang Dist.,
New Taipei City 224, Taiwan
TEL. +886-2-2496-0115

Isolite Ceramic Fibers Sdn. Bhd. (Malaysia) [ICF]

Plo 345 Jalan Emas Dua, 81700, Pasir Gudang, Johor, Malaysia
TEL. +60-7-251-6231

Isolite (Shanghai) Trading Co., Ltd. (China) [IST]

Room 574, Building 1, NO.188, Aona Road, Pilot Free Trade
Zone Shanghai China
TEL. 86-512-6825-8051

IIP Europe GmbH (Germany) [IIP-E]

Fritz-Vomfelde-Str. 34, 40547 Düsseldorf, Germany
TEL. 49-211-53883-269

[Equity-method affiliates]

<Japan>

ITM-UNIFRAX Co., Ltd.

20-8 Takeda, Kouzaki-machi Katori-gun, Chiba 289-0212
TEL. +81-478-72-3850

<International>

Isolite Fanshin (Taiwan) Co., Ltd. (Taiwan)

8F, EU Bldg., 18, Lane 321, Yang-Kuang Street, Taipei, Taiwan
(11468)
TEL. +886-2-2799-3030



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