

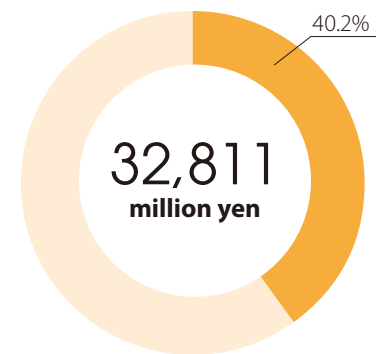
Net sales and percentage to total

Overview of business results for FY ended May 2022

Three-year consolidated income and expenditure plan

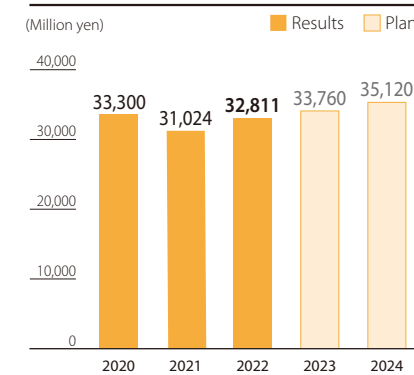
(For each FY ended May 31)

Interior Fittings

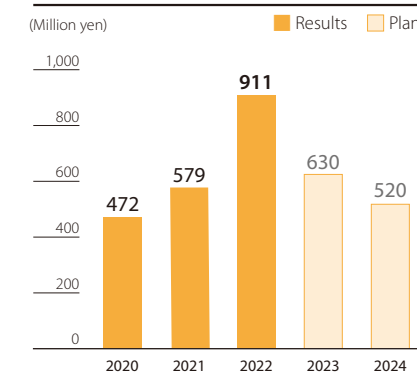


Sales of household carpets and curtains were sluggish due to the impact of the COVID-19 pandemic. However, total net sales in the Interior Fittings segment increased because of the contribution from sales of the space design business and the solid performance of wall covering-related sample books combined with the effect of price revisions.

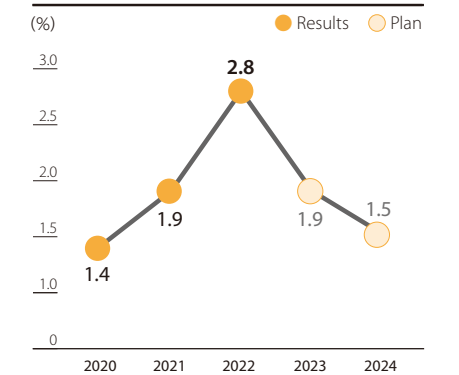
Net sales



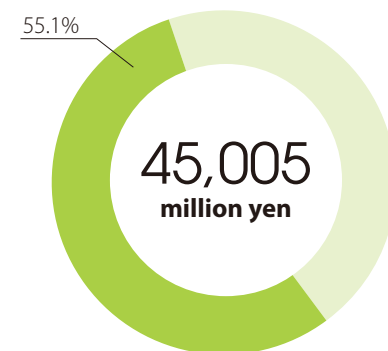
Operating income



Operating margin

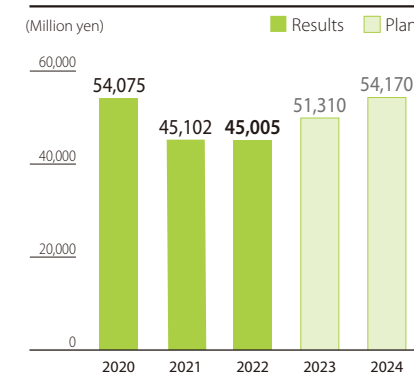


Automotive Textile and Traffic Facilities

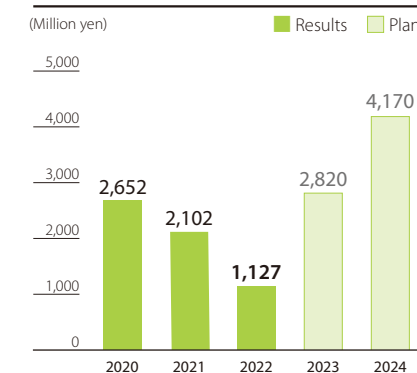


Although overseas automobile-related sales increased thanks to strong car sales and the effect of foreign exchange rates, domestic automobile-related sales were affected by the decrease in production due to the shortage of components and sluggish sales of traffic facilities products. This resulted in a slight decline in net sales of this segment as a whole. Profits were significantly impacted by soaring prices of raw materials as well as rising distribution costs.

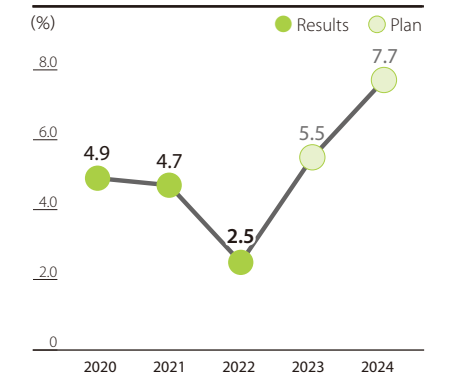
Net sales



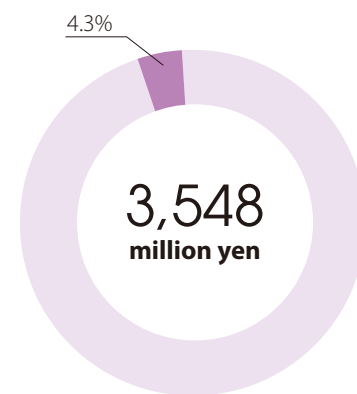
Operating income



Operating margin

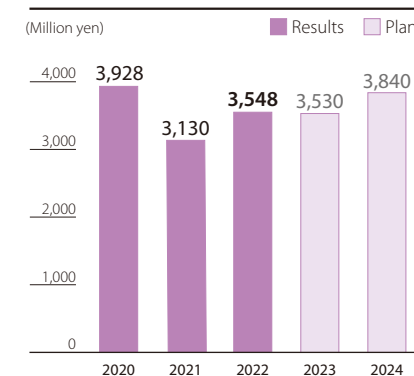


Functional Materials

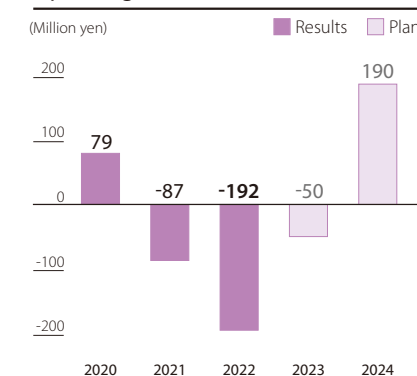


Orders received for fabric-coated heating products increased as the impact of the warm winter in the fiscal year ended May 2020 dissipated. Orders for floor materials for bathrooms were also robust. In terms of profits, the Functional Materials segment was adversely affected by the decrease in income from deodorizing filters for air purifiers, a surge in costs related to the import of fabric-coated heating products, and consolidation costs for factories in China and Vietnam.

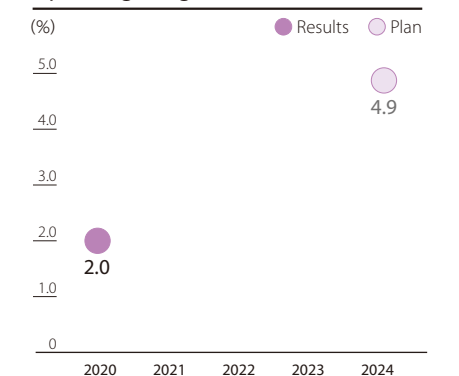
Net sales



Operating income



Operating margin




* The above data for the fiscal year ending May 2023 are the forecast figures for consolidated financial results that were disclosed on July 15, 2022. The data for the fiscal year ending May 2024 are the figures that were planned at the time of formulation of the Medium- to Long-term Management Targets and disclosed on July 13, 2021.

Interior Fittings


Business Details

Wholesale of interior textiles for commercial use (in Japan and overseas), interior finishing work (curtains, carpets, wallpaper, plush hand-woven curtains, hand-woven carpets and hooked rugs, etc.), wholesale of household interior textile products, EC business, store design and construction (Space Design Business), sales of curtains and other optional items, and production and sales of arts and crafts


Major Products




Carpet tiles




AVANCERA FLOOR




Doncho (plush hand-woven curtains that separate a stage from the auditorium)




Dantsu (high-class hand-woven carpets and hooked rugs)




Nishijin brocade fabric Coin purses and card holders




Rugs and mats



Curtains



Wallpaper



Fusuma paper (paper for sliding doors)

SWOT Analysis

Strengths	Weaknesses
<ul style="list-style-type: none">Capability for developing eco-friendly products and highly functional products and the system of supplying these productsDiversified functions as a manufacturer, wholesaler, and constructorCapability for planning, designing and coordination of the entire room spaceCapability for manufacture and development of traditional craftwork through preservation of traditional techniquesSales capability through cooperation with other businesses	<ul style="list-style-type: none">Low brand awarenessDecreased demands for carpets, the mainstay product of this segment
Opportunities	Threats
<ul style="list-style-type: none">Increased demand for environmentally friendly productsGrowing interest in interior materials due to lifestyle changesIncreased demand for design and proposals for the entire room space due to diversification of work environments	<ul style="list-style-type: none">Reduction in the interiors market scaleDecreased number of new housing startsSoaring prices of raw materials due to high crude oil prices, etc.Unstable supply of raw materials due to fewer supply chains

Companies Engaged in the Business

Suminoe Textile Co., Ltd., SUMINOE Co., Ltd., RUNON CO., LTD. , Suminoe Logistics Co., Ltd., TANGO TEXTILE Co., Ltd., Suminoe Works Co., Ltd., Sewing Hyogo Co., Ltd., CPO Co., Ltd., PRETERIOR-TEXTILE Inc., Kyoto Traditional Art and Craft Factory of Suminoe Textile Co., Ltd., Suminoe Techno Co., Ltd.

SGW

SUMINOE GROUP WAY
2022~2024~2027

Strategies and Measures and Progress Assessment for FY Ended May 2022

Strategies and measures	Progress	Strategies and measures	Progress
Expand lineups of environmentally friendly products and increase sales of these products.	○	Reduce inventory levels.	○
Commercialize and launch anti-virus wallpapers.	○	Strengthen directly operated EC business.	○
Enhance transmission and penetration of our brand image.	△	Simplify delivery.	×
Develop new products for housing.	△		—


Review and Future Prospects by the Officer in Charge

Despite difficult market conditions, we achieved both sales and profit growth in FY2022.

We will expand the lineups of eco-friendly products.

Norihisa Murase

Director
Division Manager
Interior Textile Business Headquarters



Review of FY Ended May 2022 (Results and Future Challenges)

In the first year of the SGW, the COVID-19 pandemic persisted as in the previous fiscal year ended May 2021. To address the pandemic, the Japanese government implemented and extended the state of emergency measures and semi-emergency measures, which had a significant impact on the business results of the Interior Fittings segment. Nevertheless, this segment achieved both sales and profit growth in FY2022, primarily driven by robust sales of wall coverings. Another contributing factor was that sales of commercial carpets were mostly unchanged from the previous year despite difficult market conditions. In the fiscal year under review, we focused on expansion of our market share by enhancing lineups of environmentally friendly products and establishing the Space Design Business. Notably, ECOS®, eco-friendly carpet tiles under the horizontal recycling system, steadily penetrated the market, encouraged by growing environmental awareness. In addition, in cooperation with relevant divisions, we sold eco-friendly products, such as ECOS®, and functional products to existing customers of the Automotive Textiles and Traffic Facilities segment. In this manner, we successfully developed new markets by leveraging the strengths unique to the Group, which operates in multiple business fields.

On the other hand, our brand image has not sufficiently been transmitted. Raising awareness of the SUMINOE brand is a challenge to be addressed in the future. We will strengthen branding by improving our website and by other means in the next fiscal year and onward.

Future Prospects (Toward Achieving the SGW 2023)

As in FY2022, in order to increase revenue, we will work to expand sales of environmentally friendly products and various functional products while promoting the Space Design Business, aiming to win more orders for designing of the entire room space. We also plan to develop higher-spec, luxurious products and expand into the B-to-C market, capitalizing on the sales capabilities of PRETERIOR-TEXTILE Inc., which joined the Group in January 2022.





Improving the profitability is also a major challenge for us. Currently, prices of raw materials of carpets for general household and commercial use, curtains, wallpaper and other all products are rising. I will conduct business management based on the idea that the most important point is selling products at reasonable prices. In addition, in cooperation with the Development Department, we will strive to improve the efficiency of transportation, secure stable supply and flexibly respond to customer needs so as to enhance the competitiveness of this segment.

In the Interior Fittings segment, we will continue to work on the development of products unique to the Suminoe Textile Group, in keeping with its development philosophy of “KKR+A (Kenko [Health], Kankyo [Environment], Recycling and Amenity).” In so doing, we will contribute to the realization of a sustainable society and work to better operate a business that constitutes a basis of the Group.

Topics

ECOS® series winning two major prizes in the 4th EcoPro Awards and the 22nd Green Purchasing Award

The ECOS® series, eco-friendly carpet tiles under the horizontal recycling system, won the Economy, Trade and Industry Minister’s Prize in the 4th EcoPro Awards, as an advanced product full of originality. The EcoPro Award program honors practices that contribute to the realization of a carbon-free society and circular economy. Moreover, ECOS® received the Grand Prize in the plastic resource recycling special category of the 22nd Green Purchasing Award, which commends products and services with excellent environmental friendliness. The prize was presented to ECOS® in recognition of its features, such as using waste carpet tiles as recycled materials and achieving reduction in water usage, electricity usage and wastewater during the production process.



Details of winning awards

Product introduction video (Japanese only)

Automotive Textiles and Traffic Facilities (Automotive Textiles)

Business Details

Development, production and sales of automotive interior products (ceiling materials, seat covering materials, floor carpets, luggage compartment, car mats, and other interior products in general), automotive exterior textile products (wheel houses, engine covers, and other textile products). Our products are supplied to all Japanese automobile manufacturers.

Major Products



Seat covering materials

Floor carpet

Car mat

SWOT Analysis

Strengths	Weaknesses
<ul style="list-style-type: none">Capability for total coordination of automotive interior productsGlobal manufacturing system that enables stable quality and supplyStrong global supply chainCapability for development and proposals of new materials through integration of technologies developed in multiple businesses	<ul style="list-style-type: none">Insufficient consolidation of technologies and expertise possessed by overseas operation sitesCapability to deal with price fluctuations caused by external factors
Opportunities	Threats
<ul style="list-style-type: none">Response to the automotive industry that is the age of transformation represented by CASEIncreased demand for environmentally friendly productsIncreased demand for textile-based products that are lightweight and excel in noise-absorbing performance	<ul style="list-style-type: none">Decrease in the number of domestically produced automobiles due to a declining birthrate and aging population and young people's alienation from carsIntensified price competitionNew entry of overseas manufacturers that produce automotive interior textiles and seat covering materials into the market

Companies Engaged in the Business

Suminoe Textile Co., Ltd., Suminoe Logistics Co., Ltd., Suminoe Teijin Techno Co., Ltd., Teijin Tecloth Ltd., Owari Seisen Co., Ltd., Suminoe Techno Co., Ltd., Suminoe Textile of America Corporation, Bondtex, Inc., Suminoe Textile de Mexico, S.A. de C.V., SPM Automotive Textile Co., Ltd. Suzhou Suminoe Koide Automotive Accessories Co., Ltd., Suminoe Textile Shanghai Co., Ltd., T.C.H. Suminoe Co., Ltd., Suminoe Koide (Thailand) Co., Ltd., PT. Sinar Suminoe Indonesia, PT. Suminoe Surya Techno, Suminoe Teijin Techno Krishna India Pvt. Ltd.

SGW SUMINOE GROUP WAY
2022~2024~2027

Strategies and Measures and Progress Assessment for FY Ended May 2022

Strategies and measures	Progress	Strategies and measures	Progress
Development, sales promotion and effective use of environmentally friendly products	○	Development of products, focusing on “new parts” and “production with less man-hours” as key words	△
Development of interior materials for next-generation vehicles	△	Development of fabric materials using new production methods	○
Cost reduction through the optimization of material procurement	△	Development in accordance with the situations and issues of each global operation site	△
Horizontal development to overseas markets	△		—

Review and Future Prospects by the Officer in Charge

Aiming to increase profits and market share, by expanding sales of the Company’s proprietary products and strengthening the decorative fabric business

Toshiro Maruyama

Director
Division Manager
Automotive Textiles Business Headquarters



Review of FY Ended May 2022 (Results and Future Challenges)

In the first year of the SGW, Japanese automobile manufactures suspended operations one after another for several reasons, including the prolonged global shortage of semiconductors, component supply shortfall in Southeast Asia caused by the spread of COVID-19, and lockdowns mainly in Shanghai. Under such situations, both net sales and operating income of the Automotive Textile business fell significantly below the planned figures. However, by focusing on cost saving, cost reduction and quality improvement measures, we were able to minimize the impact of a decline in sales and inflated raw material prices. We also placed emphasis on the development of products that are expected to be profitable in the future and on activities to propose these products.

In recent years, the Group’s environmentally friendly products have attracted increasing attention from various automakers. These car manufactures have frequently adopted our fabric products using e.colore®, a processing technology that substantially reduces the volume of dyeing solution required during the dyeing process by effectively interweaving a solution-dyed yarn* with base fabric yarn. Such products enjoy high popularity among our customers. Although this technology has not been sufficiently applied to overseas production sites, we are aware that products using e.colore® will act as a touchstone for the future growth.

* Solution-dyed yarn: Yarn that is pre-colored by adding pigments in the stage where raw materials are heat-melted.

Future Prospects (Toward Achieving the SGW 2023)

The key to achieving the SGW is the seat fabric embroidery techniques, which we will begin to provide in the second year of the Three-year Consolidated Income and Expenditure Plan. As part of the decorative fabric business, which offers seat fabrics accented with embroideries, three subsidiaries in China will newly start to procure, manufacture and sell these products. We will strengthen the decorative fabric business while expanding sales of Grace Code®, the Group’s proprietary narrow woven fabric that is currently in production, aiming to increase profits and market share.

In Indonesia, we have already established a system for local procurement and production in order to respond to safeguard measures. In North and Central America, we are working to optimize the balance of production at three manufacturing subsidiaries while undertaking a concrete review of the production system to improve profitability of the Company’s subsidiary in the United States. In

Japan, the Group plans to make the Shiga Factory of Suminoe Techno Co., Ltd. dedicated to production of automotive textiles so as to augment our production capacity, which will lead to an increase in sales. At the same time, we will enhance the Group’s competitiveness through cost reduction by reducing personnel expenses and logistics costs and by improving production efficiency.


It is expected that the price competition of automotive textiles will intensify in the future. I believe, however, that, in this segment, the Company can achieve growth that exceeds the market scale expansion by improving profitability through the development of eco-friendly products, high value-added products, such as products with antibacterial and anti-viral features, and products produced with less man-hours. The Company will expand its business in a wide range of product areas, including synthetic leather and new film products, beyond the existing textile products.

Topics Promoting the development of and increasing order receipts for environmentally friendly products

We have developed “e.colore®” with the aim of reducing the volume of dyeing solution required and water usage. Our textile products using e.colore® were adopted as a seat covering material for the Alto (launched in 2021) by Suzuki Motor Corporation and for the Move Canbus (launched in 2022) by Daihatsu Motor Co., Ltd.

Another seat covering material the Group has developed uses スミトロン® (SUMITRON) polyester yarn made from

recycled PET bottles. We have also created a ceiling material with less environmental impact. This is a ceiling covering material that uses no polyurethane, unlike the conventional fabric ceiling materials that are made by combining a fabric covering and polyurethane.



Alto of Suzuki Motor Corporation

Automotive Textiles and Traffic Facilities (Traffic Facilities)

Business Details

Production and sales of interior materials mainly for trains and buses (seat coverings, wall materials, curtains, flooring materials, seat cushion materials, etc.) We have supplied our products to a variety of customers. For trains, these customers include JR, private railways and publicly operated transportation services. Our products have also been used in pickup buses, route buses and sightseeing buses.

Major Products



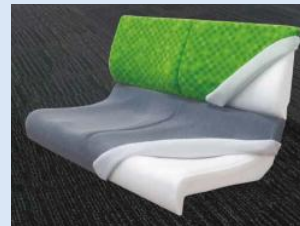
Moquette (woven velour), headrest covers, curtains



Carpets



Floor signage film



SUMICUBE®, knit fabric

SWOT Analysis

Strengths	Weaknesses
<ul style="list-style-type: none">• The Industry’s top market share percentage• Capability to offer total proposals for interior materials for public transportation systems• Environmentally friendly products with excellent safety performance	<ul style="list-style-type: none">• Aging facilities of manufacturing factories• Aging human resources• Significant impact of the decline in the traffic industry• Insufficient track records of delivery to overseas customers
Opportunities	Threats
<ul style="list-style-type: none">• Increase in travelers and foreign visitors to Japan in the post-pandemic era• Increase in users of public transportation facilities owing to practical application of MaaS• Increased demand for products processed with antibacterial and anti-virus processing	<ul style="list-style-type: none">• Decrease in users of public transportation facilities owing to declining birthrate and aging population• Decrease in the number of trains/buses owned because of decreased business trips and reduced rush-hours due to the spread of teleworking and staggered working hours• Soaring materials prices

Companies Engaged in the Business

Suminoe Textile Co., Ltd., Marunaka Souei Co., Ltd., Seki Textile Co., Ltd., Teijin Tecloth Ltd., Owari Seisen Co., Ltd., Suminoe Techno Co., Ltd.

SGW SUMINOE GROUP WAY 2022~2024~2027 Strategies and Measures and Progress Assessment for FY Ended May 2022

Strategies and measures	Progress
Increase order receipts for renovation and replacement work, both of which show signs of recovery.	×
Develop and increase sales of new products.	○
Develop environmentally friendly fabrics.	△
Increase market shares.	△
Propose and receive orders for SUMICUBE® (seat cushion material) with a new tactile impression.	△

Review and Future Prospects by the Officer in Charge

Striving to turn the business around by promoting products that meet the needs during the COVID-19 pandemic and expanding our market channels

Sadahiro Seto

Senior Operating Officer
Division Manager, Traffic Facilities Business Headquarters



Review of FY Ended May 2022 (Results and Future Challenges)

In the first year of the SGW, due to the negative impact of the prolonged COVID-19 pandemic, the passenger demand in Japan did not recover, so many transportation operators, who are our customers, were caught in a difficult predicament. Since these customers reduced investment in updating and maintaining train seats and placing orders for new sightseeing buses, sales significantly decreased in the Traffic Facilities business. In the meantime, our antiviral seat covering materials were adopted for many public transportation facilities because these products can provide users of these facilities with peace of mind. When the

passenger demand recovers in the future, the anti-viral processing will be a key technology capable of imparting a sense of security to people. We are therefore planning to strengthen proposals for these products in accordance with the increase in demand.

On the other hand, a long-term loss of demand in the traffic industry has had an enormous impact on this business. We will strive to turn the business around, by venturing into and establishing a new business field where our existing technologies and products can be utilized, while securing a competitive advantage of our mainstay products.

Future Prospects (Toward Achieving the SGW 2023)

In 1896, the Company succeeded in manufacturing moquette, a pile fabric for seat coverings, as the first of its kind in Japan. Since then, we have been maintaining the top market share in the area of seat coverings used in public transportation facilities. Seat covering materials account for roughly 50% of sales in this business segment. The Suminoe Textile Group will continue to pursue design and functionality that satisfy customer requirements, aiming to enhance its brand value.

It is estimated that in the post-pandemic era, the passenger demand in society as a whole will recover only up to 80% of

pre-pandemic levels. To achieve the SGW, we will focus efforts to promote the further spread of antiviral products and to enhance functionality of SUMICUBE® and floor signage film while bringing their prices down, thereby increasing order intake. Moreover, we will reinforce cooperation with other business segments to promote sales of seat upholstery materials for theaters and halls. Through these endeavors, the Group will increase customer acquisition by leveraging its existing know-how, which will enable the business to turn around.

Topics Our interior materials adopted for the Nishi Kyushu Shinkansen “Kamome” train operated by JR Kyushu

Kyushu Railway Company (JR Kyushu) started operation of the Nishi Kyushu Shinkansen “Kamome” bullet train, which travels between Takeo Spa in Saga and Nagasaki, on September 23, 2022. The Kamome is a six-car train, and a total of four trains were built. The Company delivered products processed with anti-virus processing for the reserved seats’ woven fabric covering and for the roll curtains installed in train cars for

reserved and unreserved seats. We also delivered SUMICUBE® cushion material for the backrest of the reserved and unreserved seats. To meet the expected demand for sightseeing tourism in the post-pandemic age, we will continue to promote anti-viral processing for fabrics and help railroad operators to develop their rolling stock in the future.



External appearance of the Kamome



Reserved seats in Car No. 3: Karakusa (Beige)



Reserved seats in Car No. 1: Kikudagara (Gray)
Reserved seats in Car No. 2: Shishigara (Green)

Functional Materials

Business Details

Moving beyond its conventional business segments, the Group has been active in advancing into new business fields, handling a wide range of products, including textiles, non-textiles, interior materials, household appliances and food. Household appliance business: Development, production and sales of fabric-coated heating products, Functional materials business: Development, production and sales of floor materials for bathrooms, deodorizing products, interior materials for aircraft, water shielding/thermal insulation sheets, and food products

Major Products



Electric carpets



Deodorant air filters for air purifier



The Tispa® Series "Real Odor Deodorization without Disguising with a Scent"



"Kakidanomi" supplement containing persimmon (*kaki*) polyphenol



Roofing materials



CLOTHCABIN®
* CLOTHCABIN is a registered trademark of TEIJIN FRONTIER CO., LTD.



Floor materials for bathrooms



Interior materials for aircraft

SWOT Analysis

Strengths	Weaknesses
<ul style="list-style-type: none">Functional materials and functional treatment technologies that are unique to the GroupEco-friendly technology capabilityOrganizational structure to realize high-quality products and high-level development	<ul style="list-style-type: none">OEM business that is vulnerable to demand fluctuationsHousehold appliances only limited to fiber-coated types of productsDelayed brand penetrationDispersion of capabilities due to business operations in multiple fields
Opportunities	Threats
<ul style="list-style-type: none">Trend toward a decarbonized society, a declining birthrate and aging population, increasing health and hygiene awareness, and the emergence of new needs due to external environmental changes, such as digital transformation (DX)New demand from existing customers in many fieldsDiscovering overseas demand, with a footing in overseas affiliates	<ul style="list-style-type: none">Unexpected changes in the external environments caused by a pandemic and other eventsMarket maturity, lowering of product prices, intensified price competitionChanges in consumer trends due to a declining birthrate and aging population and other factorsChanges in situations of the countries where overseas operation sites are located

Companies Engaged in the Business

Suminoe Textile Co., Ltd., Suminoe Techno Co., Ltd., Suminoe Textile Vietnam Co., Ltd., Suzhou Suminoe Textiles Co., Ltd., Owari Seisen Co., Ltd.


SGW SUMINOE GROUP WAY 2022~2024~2027 Strategies and Measures and Progress Assessment for FY Ended May 2022

Strategies and measures	Progress	Strategies and measures	Progress
Consolidate overseas factories of fabric-coated heating products, optimize the production and supply systems for these products, and strengthen the business capability.	△	Develop new health foods and everyday items using persimmon polyphenols and other functional natural substances and expand sales of these products.	△
Promote development of new products by using functional products and processing technologies and increase sales of these products.	△	Promote new commercialization utilizing smart textiles.	△
Develop and increase sales of products made by functionally processing technologies, such as deodorant treatment and anti-virus processing technology.	△	Cooperate with the technology development sections to strengthen the capability of sales and development.	△
Maintain and promote appropriate quality management and product supply systems in accordance with the JIS Q 9100 quality management standard for the aerospace industry.	○		—

Review and Future Prospects by the Officer in Charge

Strive to enlarge the business scale and improve profitability by promoting visualization of each business

Masaya Fukuoka
Operating Officer
Division Manager, Functional Materials Business Headquarters



Review of FY Ended May 2022 (Results and Future Challenges)

In the first year of the SGW, the Functional Materials segment fell below its performance targets since both domestic and overseas operation sites were adversely affected by the impact of soaring raw material prices, procurement problems, increase in import costs, and other factors which were triggered by the COVID-19 pandemic.

In the household appliance business, although the Company has completed the consolidation of overseas factories, it is urgently necessary to address various issues due to the changes in the external environment. In the functional materials area in the Functional Materials segment, despite the pandemic, demand for our bathroom flooring materials using olefin compounding and forming technologies remained strong, making it more important for us to supply these products. In the area of functional processing, mainly deodorizing treatment, efforts are under way to develop effective use and new applications of these technologies in various fields, including household appliances, healthcare and nursing, materials, and sundries. In the fiscal year ended May 2022 under review, we launched a new product, SUMINOE FRESHTM Filter, which incorporates the Group's unique antivirus technology, トリプルフレッシュデオ (TRIPLE FRESH DEO). In all areas, we will remain committed to enhancing quality and the supply capability and to develop and promote new businesses and products that capitalize on our functional materials and processing technologies.

Future Prospects (Toward Achieving the SGW 2023)

Toward achieving the SGW, based on the results of the FY2022 review, we will promote visualization of each business area in this segment and tackle challenges in order to enlarge the business scale and improve profitability. We have been vigorous in developing applications and increasing product lineups of the next-generation fibers and textile fabrics that are representative of smart textiles and of supplements and other functional items using natural ingredients. The Group's products under development include a sensor system making use of a water-wetting detection fabric.

Going forward, the Group will intensify its efforts to promote development activities for value creation, strengthen sales and development capabilities, and cultivate human resources of the next generation, aligning itself with its development philosophy "KKR+A" (*Kenko* [Health], *Kankyo* [Environment], Recycling and Amenity).

Topics Consolidation of overseas factories of fabric-coated heating products, aiming to strengthen our business capabilities

The Group consolidated overseas factories in order to optimize its production and supply systems for electric carpets and other fabric-coated heating products and to strengthen its business capabilities. As a result, Suzhou Suminoe Textiles Co., Ltd., which started operations in 2003, is now in charge of procurement, sales, quality management and development of fabric-coated heating products and deodorizing filters, striving to enhance the value of this business. Another overseas factory, Suminoe Textile Vietnam Co., Ltd., commenced production in 2020. Although there was a delay in developing its production function due to the COVID-19 pandemic, the Vietnamese subsidiary became the Group's main manufacturing factory for fabric-coated heating products in 2022. We also plan to produce main components in-house in 2023. With these two operation



Suminoe Textile Vietnam Co., Ltd.



Suzhou Suminoe Textiles Co., Ltd.

bases overseas, the Group diversifies regional risks. We will work to secure current orders for and improve the profitability of fabric-coated heating products through the coordinated efforts of factories in Japan, China, and Vietnam. At the same time, the Group will promote the development of products that meet market demand, seeking to expand sales channels in Japan and abroad and increase product lineups.

Fundamental Development Philosophy



Under its fundamental development philosophy “KKR+A (Kenko [Health], Kankyo [Environment], Recycling and Amenity),” the Suminoe Textile Group has been working on research and development of technology and products that help resolve environmental issues and contribute to society while striving to sow seeds for industry-academia collaboration. We will continue our efforts to develop new technologies and products that are friendly to people and the environment, based on “KKR+A” and core technologies that the Group has cultivated for many years.

Core Technologies

Textile and knitting production technology

Coating technology

Recycled polyester yarn-making technology

Lamination technology

Functionalization technology

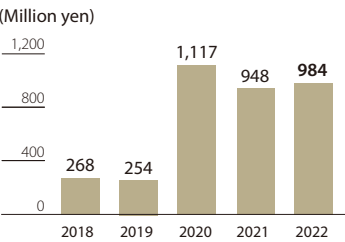
Hard cotton processing technology

Research and Development System

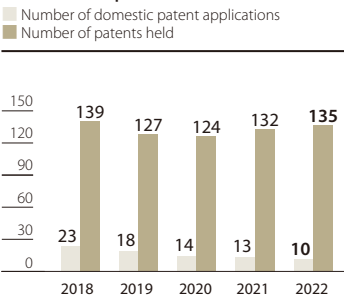


The Group carries out research and development based in the Nara Factory, through cooperation between the Development Department, which conducts research and development of core technologies, and the development teams of respective business segments. In December 2021, we reorganized the Nara Factory (see p27). On that occasion, the Technology Development Center building was completed, as our new R&D facility with state-of-the-art assessment instruments and R&D equipment.

R&D expenses



Number of patents



Demonstrating synergy effects Accelerating the development of new products



SGW SUMINOE GROUP WAY 2022~2024~2027 R&D Challenges and Progress Assessment for FY Ended May 2022

Strategies	Progress	Strategies	Progress
Enhance functionality of bathroom interior products.	○	Basic research using bioplastics	△
Improve floor signage film.	○	Basic research for extracting beneficial substances from woody biomass	△
Develop and commercialize chemicals for multifunctional processing.	△	Smart textiles: Efforts for commercialization of water-wetting detection systems and power generating fibers	△
Develop antibacterial and anti-virus technologies and evaluation techniques.	○		
Develop new products using raw materials derived from nature.	△	_____	—

Expectation for Smart Textiles

The Group moves forward with the development of smart textiles featuring new functions that cannot be found in general textiles.

For example, the Group's unique technology is applied to power-generating fiber/textile-shaped photovoltaic cells, which generate electric power when illuminated by light. As power-generating components with high flexibility and breathability, their expected applications include power sources for IoT equipment and wearable devices. In addition, our water-wetting detection system is designed to make a reaction when a wet condition is detected. Since this system can be formed into various shapes and sizes, it is assumed to be used at nursing-care facilities, construction sites, and the like.

As mentioned above, we are developing products having functions of collecting and communicating information by embedding a sensor or a power-generating element into textiles. It is expected that these smart textiles will enable us to develop business in new areas through collaboration with other industries, including electrical and electronic, IT, healthcare, nursing, environmental, and social science.



Comments on Research and Development Strategies by the Officer in Charge of Research and Development

Aiming to ensure sustainable growth of the Suminoe Textile Group through contribution to resolving social issues

Eiichiro Kimura
Director
General Manager, Development Department



The Development Department, which is tasked with R&D activities, aims to establish a new business model for achieving sustainable growth by creating value that helps resolve social issues, under the slogan of “KKR+A.” To this end, I believe that it is important to produce new and unique technologies that will sow the seeds for sustainable growth, leveraging our dual strengths: functional enhancement technologies and evaluation technologies for textile and resin products. We will also refine our production technologies through the effective use of the one-of-the-kind facilities possessed by Suminoe Techno Co., Ltd., which

is in charge of production.

In May 2022, the Nara Factory reorganization project was completed. Removal of dyeing facilities and a wastewater treatment plant has enabled the Factory to significantly reduce environmental impact during production. We will step up our efforts to reduce waste, introduce renewable energy, and utilize natural and recycled materials, in order to evolve the Nara Factory from a conventional “manufacturing base to produce eco-friendly products” into a “manufacturing base that creates a rich environment.”

Strengthening Functionality as the Mother Plant to Further Promote Value Creation



The Nara Factory of the Group started operations in April 1971, when Japan was in the period of high economic growth. The Factory served as the center of tufted carpet manufacturing, the largest of its kind in Asia at that time. Subsequently, as the market for tufted carpets began to shrink, in 1980 the Nara Factory became the first in Japan to produce carpet tiles, with an eye toward the future. In 2011, the Group developed the ECOS® series, eco-friendly carpet tiles under the horizontal recycling system, inaugurating a new era in the utilization of waste carpet tiles, which previously had to be dumped in landfills.

The Nara Factory has evolved as the mother plant of the Group. After about half a century had passed since its establishment, we decided to update the Factory to better adapt to the times, aiming to achieve the Group's further growth and development. In 2019, we launched a full-scale reform scheme entitled "the Nara Factory Reorganization Project. Given that the project was completed in May 2022, the Nara Factory has been in operation with a greater value creation capability and stronger competitiveness.

Details of the Nara Factory Reorganization Project

1. Improve value creation capability

- Strengthen the roles of the Factory as the mother plant: crate new products, nurture engineers, and supply these products and engineers to the Suminoe Textile Group.
- Strengthen R&D and product development functions through cooperation between engineers of different departments. (Construct a Technology Development Center)

2. Improve productivity

- Concentrate production facilities (so that the Nara Factory specializes mainly in Interior Fittings products, and the Shiga Factory in Automotive Textiles products).
- Further strengthen the foundation as the manufacturing base for ECOS®.
- Upgrade the Factory into a high-efficient logistics base (create a functional work flow from production to shipping) and reduce product inventories.

3. Measures to reduce environmental impact

- Remove dyeing facilities and a wastewater treatment plant.

4. Sell off unnecessary production facilities and idle properties that account for one third of the total site area



Hiroaki Ishii

Trustee, Nara Factory
General Manager,
Production Department
Suminoe Techno Co., Ltd.

Witnessing the effects of the reorganization project that boldly renovated the Nara Factory

To reorganize the Nara Factory, which has a history of more than 50 years, it was necessary to select what should be maintained and what should be changed, based on the fundamental assumption of creating an environment where employees can work happily and safely. What should we do with technologies and facilities that had been handed down for generations? In what way should we evolve the Factory as an eco-friendly production site? In quest of the answers to such questions, we held discussions on a truly wide range of subjects, including business selection and concentration, the flow of products, and a fusion of technologies.

The biggest decision we made was to completely withdraw from continuous dyeing processing, for which we had excellent technology. We decided to use solution-dyed yarn in manufacturing all carpets and remove the wastewater treatment plant. These measures have brought about significant effects in reducing environmental impact. On the other hand, the dyeing processing technologies we had cultivated until then are now utilized for the filter business.

At the center of the reorganization project was efficiency improvement achieved by consolidating production, logistics and technologies. Taking carpet production as an example, we consolidated production facilities for each process that had been scattered throughout the vast site before. This consolidation has enabled us to dramatically improve efficiency in transfer and storage of half-finished products. On the production front, the construction of a Technology Development Center building has brought technology development members from Suminoe Textile Co., Ltd. and from Suminoe Techno Co., Ltd. close to each other in a variety of ways. I feel that they are making positive progress while merging technologies in which each member has expertise, toward resolving issues at hand and developing new technologies for the future.

It is true that this reorganization project entailed a large investment. However, I am sure that the Nara Factory will henceforth produce excellent products, technologies, services and human resources, which will be most advanced not only in the Suminoe Textile Group but also in society as a whole.



Yoshinari Miyamura

Group Leader,
Functional Processing
Development Group
Development Section
Technology Development
Center
Development Department
Suminoe Textile Co., Ltd.

Endeavoring to enhance brand value in a new environment through technologies

I am engaged in creation of new technologies and products and improvement of existing technologies and products in a section called the "Technology Development Center," whose duty is to conduct R&D activities. On the occasion of the Nara Factory reorganization, a Technology Development Center building was constructed. I think this is very important in facilitating forward-looking technology and product development. This is because technologies are the starting point for creating new functions and products, which will be conducive to solving problems in our everyday life and industries.

The new building uses a hot-desking system, which has provided me with many more opportunities to talk with my supervisors and coworkers and to enjoy lively exchange with members of other departments. In this new environment that encourages flexible thinking, I wish to improve the brand value of the Group through technologies.



Masanori Nishiguchi

Manager
Nara Product Development
Section
Technology Development
Department
Suminoe Techno Co., Ltd.

Vigorous exchange of views among engineers, stimulating the improvement of our technological capabilities

As a result of the Nara Factory reorganization, we are now working in an open-office space, which is easy to get around and allows us to hold an instant meeting anytime we want, bringing together relevant members. In addition, work efficiency has drastically increased since the Technology Development Center building was constructed adjacently to the office, and test instruments that were previously dispersed across the Nara Factory site are now concentrated within the new building.

I am in charge of developing new products, making effective use of these facilities. I believe that improving our technological capabilities will create a better future for our company. It will not only encourage the proposals for new products but also lead to improvements in the Factory's facilities and production methods. Also, the reorganization has promoted vigorous exchanges of views transcending the departmental boundaries, stimulating the improvement of our technological capabilities.



Hiroaki Okada

Director
Nara Center
Suminoe Logistics Co., Ltd.

Feeling employees are highly motivated by the new work environment

I am mainly responsible for storage and management of products produced at the Factory, as well as transaction with transportation companies to transport products nationwide after receiving orders from sales companies. As part of the reorganization of the Nara Factory, a multi-story warehouse was constructed, greatly enhancing logistics functions. Previously, since the Factory had a tent warehouse, operation in the shipping yard was largely affected by weather conditions. So we had great difficulty each time the region was hit by a typhoon or heavy rain. However, now we are free from such difficulties and concerns.

It is about half a year since the renovation was completed. The new work environment with the face-lifted buildings has highly motivated our employees, which I feel is visible in their facial expressions. In the future, I will continue to maintain this wonderful environment while watching over all the employees working at the Nara Factory in order to ensure that they can enjoy their jobs.