



# THE DEVELOPMENT OF THE FREUDENBERG GROUP (SINCE 1849)



# CREATIVE TECHNICAL SOLUTIONS— SINCE 1849

The Freudenberg Group stands for technology and progress. Innovation is the common thread that runs through its history – from chrome tanning to the Simmerring®, all the way to sophisticated, highly technical sealing and vibration control systems, batteries and fuel cells, technical textiles, filters, state-of-the-art cleaning products, chemical specialties and medical products. The Freudenberg Group combines a capacity to innovate with strong values – and its technical expertise with a sense of responsibility for humanity, society and natural resources. Since the company's founding by Carl Johann Freudenberg in 1849, it has embraced quality, dependability, partnerships with customers, and financial solidity as its cornerstones over its more than 170-year history.

Freudenberg has always been successful through change. Today the Group is offering its customers solutions and answers to tomorrow's questions. Freudenberg is at home in about 40 market segments and thousands of applications – often invisible, but always essential. Freudenberg is everywhere in our lives today: Our solutions make sure that the air in rooms is getting cleaner, that cars can be driven, and that wounds heal more quickly.

More than 50,000 employees go to work every day to ensure that the Freudenberg success story continues to be a story of innovation – working together, on international projects and on teams that stand out for their diversity. Armed with a long-term vision, they are shaping the future sustainably, with efficient, increasingly digitalized processes, resource-sparing products and sophisticated services.

# FROM WORKSHOP TO INDUSTRIAL COMPANY

## 1849-1929

Heintze & Freudenberg established  
First international business relationships

1849

Patent leather developed  
International business expanded

1850



Carl Johann Freudenberg, in about 1860



The "panel field" next to the lacquering shop: the panels with patent leather are dried in the sun

On February 9, 1849, the tannery Heintze & Freudenberg, which has 50 employees in Weinheim, is established by the partners Heinrich Christian Heintze (1800–1862) and Carl Johann Freudenberg (1819–1898). The two entrepreneurs produce fine calf leather. The leather production consists of about 75 production steps, which are individually optimized to produce high quality leather. This quality standard is still part of Freudenberg's self image.

A lively international trade (including exports to the USA, Great Britain, France and Turkey) flourishes from the beginning.

One year after the establishment of the company, Freudenberg develops its first innovation: the company flourishes with the introduction of patent leather production in 1850. Five years later, patent leather already accounts for more than 80 % of production. In order to meet the high demand, Freudenberg builds a second plant in Weinheim in 1852: a lacquering shop.

At the same time, the first overseas branch is opened in the UK. A global procurement (rawhide import) and sales network is established, including business relationships with Italy (1851), Scandinavia (1852), Brazil (1853), Spain (1854), Russia (1855) and India (1867).

Carl Freudenberg becomes sole owner of the company

Company health insurance established

1874

The second generation on the Management Board

First business principles

1887

Following the death of the partner Leopold Heintze in 1874 Carl Johann Freudenberg becomes sole proprietor. The company is renamed Carl Freudenberg and develops into the largest tannery in Germany, and later in Europe.

In the same year Carl Johann Freudenberg establishes health insurance for his employees, which becomes Betriebskrankenkasse Freudenberg. Ten years later, in 1884, statutory health insurance is introduced in Germany.

In 1887 Carl Johann Freudenberg introduces the next generation. His sons, Friedrich Carl (1848–1942) and Hermann Ernst Freudenberg (1856–1923) become partners. At this time, the company employs more than 500 employees. On the occasion of his sons joining the company, Carl Johann Freudenberg writes his business principles. Modesty, honesty, a solid financial foundation and the ability to adapt to the respective changes are Carl Johann Freudenberg's most important principles for successful entrepreneurship. Today, these Guiding Principles form the basis of Freudenberg's Business Principles.

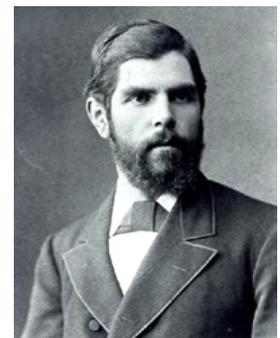
With the death of Carl Johann Freudenberg in 1898, Friedrich Carl and Hermann Ernst Freudenberg take over the business completely.



*The coat of arms of the Carl Freudenberg tannery, 1874*



*Friedrich Carl Freudenberg, 1895*



*Hermann Ernst Freudenberg, 1880*



Dining room in the Müll plant, 1899



Chrome tannery, 1904

The first canteen for employees opens in 1892. Soon there are plant kitchens where the workers can get a warm lunch every day for a small fee in all factories.

In 1894, on the occasion of their golden wedding anniversary, Carl Johann and Sophie Freudenberg set up an assistance fund for employees and their families in financial hardship, with a capital of 100,000 Gold Marks and an annual income of 6,500 Gold Marks.

As the demand for Freudenberg leather continues to rise new production capacity is necessary. As a result, a hair wash facility is built in 1896. In the hair wash facility the hairs from dehairing skins (which are first sorted by color) are cleaned and prepared for felt production. This leads to the creation of the Zwischen Dämmen plant, the site on which Freudenberg's headquarter now stands.

Between 1900 and 1904, Hermann Ernst Freudenberg develops the chrome tanning process, which is already being practiced in the US, using his own experiments. The tanning process is now carried out with chrome liquor or chromium salts instead of tanning liquor, which consists of various plants (mostly oak bark). This reduces the duration of the tanning process from several months to a few weeks. The leather is waterproof, easy to maintain and has a uniform surface. Freudenberg is therefore one of the first leather producers in Europe able to produce high quality, chrome-tanned calf leather. With the introduction of chrome tanning, Freudenberg becomes the largest leather manufacturer in Europe.

With the outbreak of the First World War, leather business slumps significantly. Heavy declines in orders caused by the shortage of raw materials and conscription for military service means that the number of employees drops significantly – by more than 2,500 to about 800. The women take on some of the conscripted men's work until they return.

- First foreign company established

- Expansion to Asia

1921

Due to high inflation after the war, it is no longer possible to buy the necessary raw materials abroad. A finance company is therefore founded in Switzerland in 1921. Externa S. A. in Lausanne becomes the first foreign subsidiary of Freudenberg. In the same year, Freudenberg & Co. GmbH is established to manage the family shares. This separates the business operations of the company Carl Freudenberg from family affairs. To facilitate the purchase of raw materials, business relationships are expanded with India.

After the departure of Carl Friedrich (1905) and the death of Hermann Ernst Freudenberg (1923), responsibility for the business is passed on to the next generation. Richard (1892–1975), Hans (1888–1966), Otto (1890–1940) and Walter Freudenberg (1879–1957) take over the management. Richard Freudenberg assumes a representative role for the company. Freudenberg also establishes business relationships with China.



*During World War I, women took the place of their husbands, doing the latter's work in the tannery, 1916*



*Leather label for export to China, 1923*

# GREAT DEPRESSION AND DIVERSIFICATION

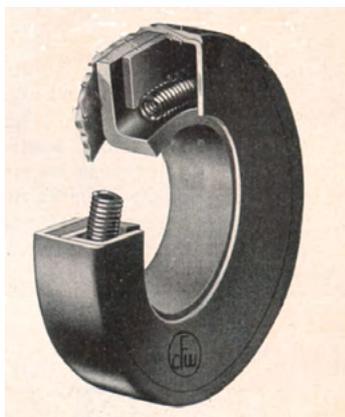
1929-1948

First seals produced  
1929

Simmerring® developed  
1932



First seals produced on a spindle press, 1929



Simmerring® with garter spring, 1932

The global economic crisis affects the entire leather industry in Germany to the brink of viability. The sale price for finished calf leather drops dramatically: it is only a fifth of the purchase price for rawhide.

To secure the jobs of what are now more than 3,500 employees, the management develops its own short-time working model. One half of the workforce continues the production, while the other stays at home: they change roles every two weeks. Employees and their families thus have a chance to get through the difficult period of the global economic crisis.

The difficult economic situation means that the management team of Richard, Hans, Otto and Walter Freudenberg introduce diversification to the company with entirely new products. The first step is the production of leather sleeve seals for the growing automotive industry in 1929. The company's first American company is established in Boston in the same year.

From 1932 a new era at Freudenberg begins with the revolutionary Simmerring®: sealing technology. Its name is taken from the Freudenberg developer Walther Simmer. The Simmerring®, a radial shaft sealing ring for sealing rotating shafts replaces the felt seals previously used. These had often resulted in overheating seals and damage to engine and axle bearings. The Simmerring® delivers significantly better results from the very start. It consists of a sheet metal housing with an integrated leather sleeve. Using a garter spring improves the radial force and sealing performance.

Entry into shoe business  
Start of Nazi dictatorship

1933

In 1933, Freudenberg takes over the shoe production and commercial chain of the Jewish-owned company Conrad Tack in Burg close to Magdeburg. Takeover talks between the economically ailing Tack and its long-time leather supplier Freudenberg had first been held as early as 1932. However, the effects of the Great Depression meant that they were unsuccessful at that time. After the Nazis seize power, the situation for Tack steadily worsens and the company once again enters into takeover talks with Freudenberg. In 1933, these finally lead to a contractual agreement, marking Freudenberg's entry into the shoe business.

At the time, the members of the company's management board are civic-economic proponents of the Weimar Republic. Their outspoken criticisms of Hitler, made especially by Richard and Walter Freudenberg in 1932 and 1933, show them to have been committed democrats. In the years after the Nazis seize power, however, they increasingly come to terms with the totalitarian system, to the extent that the company continues to benefit from Nazi economic policy up to the final collapse of the regime.

At this time, the parent company Carl Freudenberg employs more than 3,500 employees.



Advertisement by Conrad Tack, 1939

Main laboratory established

1934

Simmerring® with rubber sealing lip developed  
Shoe division expanded

1936



Experiments in main laboratory, 1934

The German leather industry is heavily dependent on imports. The National Socialists' self-sufficiency efforts make it increasingly difficult to import enough rawhide for leather production. In 1934 there is therefore a leather shortage in Germany. Freudenberg responds by establishing the main laboratory. The first development tasks are the utilization of skin and leather waste from the tannery and the search for leather substitutes. Research soon focuses on elastomers for the modification and further development of Buna synthetic rubber. The result is Perbunan, a material that becomes the basis for new Freudenberg products in the following years.

Freudenberg replaces leather with rubber as a sealing material. In 1936, a sealing ring made of Perbunan/NBR is developed: it has a high temperature and swelling resistance when exposed to engine lubricating oil. The NBR Simmerring® is a quantum leap for the sealing technology. The new material opens up better options with regard to the shape of the seal body. It is even possible to make the basic shape in the vulcanization tool, after which the sealing lip is precisely adjusted to the respective application using a special finishing process. In operation, the sealing effect is further enhanced by the internal pressure of the medium to be sealed. The integrated garter spring provides additional downforce. The Simmerring® with the NBR sealing lip therefore ensures optimal sealing performance of rotating shafts, such as the transmission shaft in the car, for the first time. This innovation makes Freudenberg the leading seal expert.

Nonwoven production begins

nora® shoe soles production begins

1938

Between 1933 and 1936, Freudenberg assumes control of the Gustav Hoffmann children's shoe factory in Kleve, Germany, and its elefanten® brand. Freudenberg further expands its shoe activities between 1937 and 1938 via the "Aryanization" of J. Kern & Co. GmbH in Pirmasens, a manufacturer of heel counters, and baby shoe manufacturer C. Fisch & Co. in Heidelberg. In 1938, Freudenberg also takes over the equine leather business of the Jewish company Sigmund Hirsch in Weinheim, with which Freudenberg has good relations.

As a further response to the leather shortage Freudenberg develops the synthetic latex artificial leather Viledon as a substitute material for bags and suitcases under the leadership of chemist Dr. Carl Ludwig Nottebohm. Production starts in 1938. The backing material for the artificial leather is a nonwoven that Freudenberg began developing in 1936.

The synthetic rubber NBR is also used for nora® shoe soles, which are mass produced from 1938.

The training workshop is established and starts to train apprentices in metalworking, woodworking, electrical, tanning and other vocations.



*Simmerring® with NBR sealing lip, 1938*



*Nonwoven production, 1938*

Freudenberg during World War II

1939-1945



Manufacture of nora® heels, in about 1940



Newspaper advertisement "The Simmering for every application", from Motor-Kritik, 1942

The diversification initiated before the war means it is easier to compensate for the difficult raw materials situation than in World War I, as the company is no longer exclusively active in the leather business. Therefore, the number of employees decreases only slightly from 4,350 in 1938 to just under 4,000 in 1945.

During the war, Freudenberg is also a supplier to the armaments industry. The main products involved are gaskets for various military applications, in particular for vehicles, as well as shoes and artificial leather products for the Wehrmacht.

Due to the scarcities of the wartime economy, the Nazi authorities look for ways to improve the material properties of shoe components. In May 1940, the Reich Office for Economic Development therefore establishes a shoe-testing track in the Sachsenhausen concentration camp. This continues to be operated by the SS as a punishment detail until the spring of 1945. Materials from at least 79 companies are tested there, one of which is Freudenberg.

Because of wartime labor shortages, Freudenberg employs forced laborers between 1940 and 1945. During this period, a total of 1,845 forced laborers are used in the company's works in Weinheim, Schönau and Schopfheim. Contrary to the orders of the Nazi regime, remuneration of forced laborers at Freudenberg matches the basic wage of German workers.

Start of production of Vileda cloths

5,000 employees

1948

At the end of the war, the nonwoven backing material is refined and so in 1948, the production of nonwoven-interlinings for the textile industry and Vileda cloths made from nonwovens begins. These two new products mark the birth of two completely new areas of business: household products and nonwovens. Freudenberg continues to diversify. In 1947 the company employs more than 5,000 employees for the first time.

The development of the Vileda cloth had already begun in the early 1940s, when Freudenberg considered possible uses for nonwovens. Two employees' observational skills played a crucial role in the development of the Vileda cloth. They noted that cleaning ladies used the remains of nonwovens in the plant for wet mopping. The idea was taken up. As early as 1947, Dr. Carl Ludwig Nottebohm developed the Vileda window cloth. The name "Vileda" is actually a modification of the German "wie Leder" ("like leather"), as the nonwoven felt like a chamois cloth.

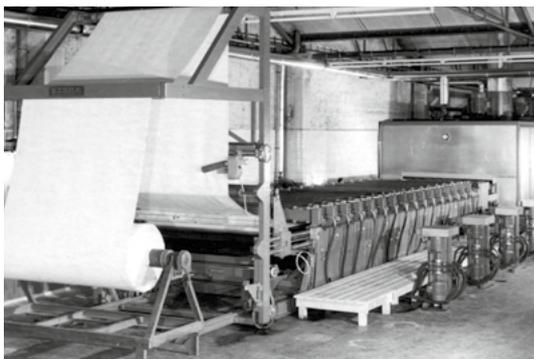
After the currency reform, Freudenberg builds on a distribution system and in 1948 founds the Frema plant in cooperation with the textile firm Martini in Augsburg, Germany. The production of Vileda cloths begins there in the same year.



Vileda advertisement, about 1950

# INTERNATIONALIZATION AND EXPANSION OF PRODUCT RANGE

## 1949-1995



Nonwoven production in the United States begins, 1950



Production of vibration control ultra bushings, 1957

Freudenberg celebrates its 100th anniversary in 1949 and presents its more than 6,200 employees with a unique institution: the "Wohnbauhilfe", a support program for aspiring home-owners, which is a response to the housing shortage after World War II. As early as 1948, employees were permitted to make bricks in their own time on the factory premises: the company made the materials and machinery available.

To this day, the "Wohnbauhilfe" also helps employees to finance home ownership.

Freudenberg was among the beneficiaries of the economic boom of the 1950s and 1960s. The company expands at home and abroad. The first foreign production company is built in the USA in 1950. Interlining for the clothing industry is manufactured in Lowell, Massachusetts. This is followed by subsidiaries and investment in Great Britain, France, the rest of Europe and finally in the Far East. The company opens up another product area: In 1950 the nora® rubber floor covering brand is introduced as a development of nora® shoe soles.

The next diversification steps follow in 1957. First Freudenberg becomes involved in vibration control technology, which complements its expertise from sealing technology. The company produces shock absorbers, antivibration mountings and ultra bushings under the name Metalastik. A partnership with the Italian seal manufacturer Corte & Cosso is formed. In the same year the product area of technical nonwovens is established with the first filters.

First partnerships in Japan  
11,000 employees

1960

Klüber Lubrication acquired

1966

1960 marks the beginning of two formative partnerships. Freudenberg turns its attention to the Japanese market and finds partners with whom it taps very successful new markets over the coming decades. Freudenberg forms a close partnership in sealing technology with the Nippon Oil Seal Industry Company (NOK) in Tokyo. In the nonwovens sector Freudenberg establishes a Joint Venture with Japanese partners: the Japan Vilene Company in Tokyo. However, the partnerships are not limited to the markets; they also include intensive technology transfer, from which both sides benefit. At this point Freudenberg has more than 11,000 employees.

In 1962, Hermann Freudenberg (1924–2010) takes on the entire coordination of the company as Speaker of the Management Board from his uncle Richard Freudenberg, who has run the company for almost 40 years.

Freudenberg acquires Klüber Lubrication of Munich in 1966, thus opening a completely new business area. There is a special background to the fact that the sole owner Theodor Klüber sells his company to Freudenberg: Richard Freudenberg's pacifism. This was indicated in a speech Richard Freudenberg made at the Bundestag (the German parliament) on December 5, 1952, where he spoke out against the rearmament of Germany, so that "Germans would not have to fight against Germans". Theodor Klüber identified with this stance and offered to sell his company to Richard Freudenberg.

In 1967, Freudenberg launches the knobbed floorcovering Norament, later to become a classic product. The first major project is to equip Frankfurt airport.



Conclusion of the contract in 1960 between Freudenberg and NOK (from left to right): Dr. Helmut Fabricius, Richard Freudenberg, Dr. Hans Erich Freudenberg, Shogo Tsuru, Dr. Kurt Brasch



Klüber BARRIERTA high-performance lubricant, in about 1966



*Spunbonded nonwovens protect the crop against adverse weather conditions, temperature fluctuations and pests, in about 1970*



*Simflex brand flexible printed circuit boards production, 1984*

An innovation by Dr. Ludwig Hartmann results in a new production technology for nonwovens. This new spunbonded nonwoven technology allows Freudenberg to develop nonwovens for new application areas, such as wound dressings in medical technology and harvest nonwovens in agriculture. The first plant with the new spunbonded nonwoven technology begins production in Kaiserslautern, Germany, in 1970.

In 1973, Freudenberg joins in the seal factory Rubrasil SA in São Paulo (founded 1958). In 1988, Freudenberg and NOK join to form Freudenberg NOK – Componentes Ltda. In 1973 the number of employees rises to more than 25,000.

In 1977, to further spread business risks and open up new markets, Freudenberg begins to produce electromechanical components and printed circuit boards. As a result, Freudenberg and its Japanese partner company NOK develop the market for flexible printed circuit boards for electrical and electronic equipment and components under the name Simflex from the 1980s. From 1996, the company is run under the name of Freudenberg Mekttec Europe. In 2010, Freudenberg passes on its participation in Freudenberg Mekttec Europe to long-standing Joint Venture partner NOK. The company continues to operate as Mekttec Europe.

In Hong Kong, Freudenberg & Vilene International Ltd. Hong Kong is established in 1977. Freudenberg Trading Hong Kong Ltd. is established for sales.

Freudenberg Foundation established

1984

Household product portfolio expanded

1985

In 1984 the non-profit Freudenberg Foundation is established. Members of the Freudenberg family transfer capital deposits and other credits to the Foundation. It is therefore a shareholder (albeit a non-voting shareholder) of the company. In keeping with its statutes, earnings from the Foundation are used to promote science and education, and to strengthen peaceful coexistence in society. The Foundation's activities focus on children and adolescents.

In 1985, the Vileda wet mop is developed: it is one of the most successful Freudenberg household products. For the first time Vileda offers a complete floor cleaning system – consisting of mop and bucket with a wringer system.

In the same year Freudenberg acquires Intece in Diadema, Brazil from the French company Chargeurs (now Freudenberg Não Tecidos Ltda.) for the production of non-wovens in Brazil.

FREUDENBERG  
STIFTUNG



*Freudenberg Foundation logo*



*The wet mop, a classic Vileda product, 1985*

China business expanded

1987

First car cabin filters  
FNGP established

1989



Signing of the contract establishing Lutravil Far East, 1987

Freudenberg Lutravil Far East (later Far Eastern Spunweb) is created in 1987 in Taiwan with Japanese and Chinese partners. It begins production of spunbonded nonwovens in 1990. The Taiwan Vilene Company (later Freudenberg & Vilene Nonwovens (Taiwan) Co. Ltd.) follows in 1989, expanding Freudenberg's activities in Asia, especially in the Chinese market. It is established with the Japan Vilene Company and partners in Taiwan.

In 1988 Dr. Reinhart Freudenberg succeeds his brother Hermann as Speaker of the Management Board, who has led the company for 26 years.

The first micronAir® brand car cabin air filters are introduced in 1989. Today, Freudenberg is the world market leader in car cabin air filters.

The American sealing activities by Freudenberg and its Japanese partner NOK are introduced in a Joint Venture: the Freudenberg-NOK General Partnership (FNGP).

In 1990, Freudenberg establishes the "Unterstützungskasse", an assistance fund for employees in need. In this way, the idea to help employees experiencing hardship in a non-bureaucratic way, is continued. The fund provides advice and financial support to employees and their families facing difficult situations such as accidents, sickness, disability, old age and death.



First micronAir® brand car cabin air filters, 1992

● First production  
on Chinese mainland

○ 1995

Freudenberg opens its first production facilities in China in 1995. Seal factories are established together with its Japanese partner NOK in Changchun and Wuxi. An interlining production company is established in Suzhou with the Japan Vilene Company.

Freudenberg's involvement in the BRIC countries (Brazil, Russia, India and China) has a long tradition. The first business relationships in Brazil and Russia date back to the 1850s, followed by India in the 1860s and China in the 1920s. From the mid-1990s, the markets in the BRIC countries are systematically developed.



*Production of oil seals in China, in about 1995*

# RESTRUCTURING AND DEVELOPMENT OF NEW BUSINESS AREAS

1996-2024



Logo of the FOKUS project



Sensor Simmerring with integrated encoder, 1997

In a large project under the name FOKUS (“Freudenberg Organisation für kundenorientierte Unternehmens-Struktur” – Freudenberg Customer-Oriented Company Structure Organization) Freudenberg adapts its structures to the broad and international positioning of the company in 1996. The company is divided into independent Business Groups that can operate independently and quickly with the focus on the customer in constantly changing markets. Freudenberg becomes a decentralized company.

The new, more flexible Business Groups focus on their respective markets and core competencies. This involves reassessing the product range and streamlining the distribution channels.

With Dr. Dr. Peter Bettermann as successor to Dr. Reinhart Freudenberg in 1997, a non-family member becomes Speaker of the Management Board for the first time.

In 1997, the Simmerring® takes on additional functions. Encoder technology is developed and the seal becomes a product that performs tasks beyond sealing. With integrated sensor technology, the encoder can measure the engine revolutions, making it possible to control anti-lock braking systems (ABS) and engine management systems.

In the same year Freudenberg Politex Nonwovens SpA is established in Novedrate, Italy for the production of polyester nonwovens made from recycled PET bottles. In 2004, Freudenberg assumes 100 % control of the Joint Venture with Italian partners.

- Launch of the TANNER youth exchange program

- Development of the Evolon® microfiber nonwoven

- Entry into vibration control technology for rail vehicles

1999

The TANNER international youth exchange program is launched in 1999 on the occasion of Freudenberg's 150th anniversary. The name TANNER is a reference to the company's roots in leather production. It also expresses the initiative's central idea: Travel And Navigate New Exciting Roads. The TANNER program enables children of Freudenberg employees, aged 14–20, to independently visit another country for two to four weeks. During this time, they live with an employee host family. This enables young people to experience foreign countries, cultures and ways of thinking in a family environment, helping them to broaden their horizons.

In 1999, with Evolon® technology, Freudenberg develops an entirely new manufacturing process for nonwovens, setting new standards in the process. Through water jet treatment, it becomes possible for the first time to generate micro-filament spunbonded nonwovens from polymer granules to textile fabrics, in one continuous manufacturing process, that display high strength and excellent textility. These nonwovens can be used for a variety of technical applications, such as material for clothing, home textiles (anti-allergic bedding), wipes or synthetic leather.

Freudenberg Schwab is founded in the same year. This is a Joint Venture with the Schwab Group involving the production of vibration control components for rail vehicles in Adliswil, Switzerland. This move marks Freudenberg's entry into vibration control technology for rail vehicles. In 2010, Freudenberg Seals and Vibration Control Technology assumes 100 % ownership of the Joint Venture.

In 1999, Freudenberg sells the Tack shoe retailing chain, reducing the size of the company's shoe division. With the sale of Elefanten GmbH (children's shoes) in 2001, Freudenberg cuts its last ties with shoe production.



TANNER youth exchange program



Evolon®, the first microfiber nonwoven from Freudenberg, 1999



Production of oil seals in Mohali, in about 2003

By 2000, the company employs more than 30,000 people worldwide.

Freudenberg Fuel Cell Components Technology is established in 2001. This new business combines the competencies that have been built up in various Freudenberg activities since the 1990s. It develops components – including seals, gas diffusion layers, filters and humidifiers – for fuel cells, a promising energy technology.

In 2002, Freudenberg bids farewell to its original leather business. Business relocations, reductions in production by large customers and a sharp rise in commodity prices have made the business unprofitable.

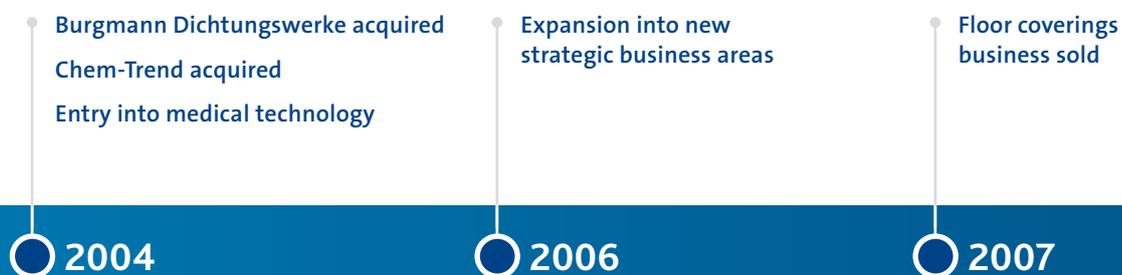
“We all take care,” a Group-wide initiative, is launched in 2002. Its goal is to promote the safety and health of all employees, the protection of the environment, the awareness of social responsibility, and site security. “We all take care” results in significantly lower accident rates.

In 2003, in the Indian city of Mohali, a production facility is constructed for seals produced by the Joint Venture Sigma Freudenberg NOK PVT. Ltd, founded in 2000 by Freudenberg Seals and Vibration Control Technology, Sigma and NOK. In the coming years, India develops alongside China into one of Freudenberg’s key growth markets.

In the same year Freudenberg Household Products acquires the US company O’Cedar Brands with the brand O-Cedar®. The company is integrated into Freudenberg Household Products.



O-Cedar® mop head, 2006



With the 2004 acquisition of Burgmann Dichtungswerke based in Wolfratshausen near Munich, Freudenberg expands its sealing business to become a specialist in mechanical seals. Activity in the oil and gas industries increases substantially. As a result, together with Japanese partner Eagle Industries, the globally active Eagle-Burgmann Group is created. Freudenberg also buys US release agent specialists Chem-Trend to complement its chemical specialties activities. The acquisition of the American company Jenline Industries in the same year, a manufacturer of silicone rubber products, sees Freudenberg enter the medical technology industry.



*Burgmann mechanical seal, 2004*

Freudenberg strengthens its activities in the oil and gas industries, as well as in medical technology, through targeted acquisitions under the buy-and-build strategy. 2006 sees the purchase of the Imperial Rubber and Urethane Corporation in Nisku, Canada to strengthen the oil and gas business. In the same year, Freudenberg acquires Helix Medical, a manufacturer of high-quality precision moldings and tubing for medical, pharmaceutical and biotech applications. Freudenberg opens its first production plant in Russia in Nizhny Novgorod. Freudenberg Politex Nonwovens produces polyester nonwovens for the construction industry at the new plant.



*Medical products from Helix*

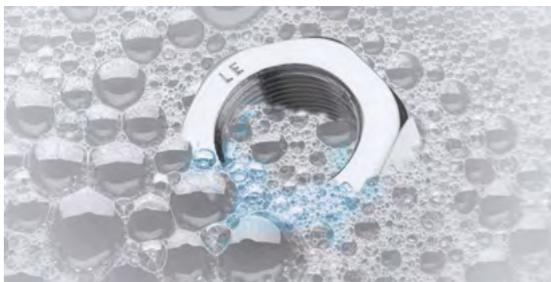
In 2007, Freudenberg separates from its floor covering business. Freudenberg Building Systems KG, with its nora® brand, is sold to a consortium of investors and continues production in Weinheim. Today, the company operates under the name nora Systems.



*Sealing products for the oil and gas industry*



Opening of the Gala production plant in Adas in 2011



SurTec surface finishing, 2010

The worst economic crisis since World War II is triggered by a slump in the US financial markets in September 2008. Within a few weeks, this spreads across the global financial markets, causing massive losses in liquidity. Together with existing instability in the real economy, this has a devastating effect on global industrial production. Not even Freudenberg can escape these developments. Particularly hard hit are the company's key automotive and mechanical engineering segments. In 2010, thanks to an extensive range of measures, Freudenberg emerges strengthened from the crisis.

Freudenberg Household Products expands in Asia. In 2009, the Freudenberg Gala Household Products Joint Venture is founded in India with Indian partners. This deal sees Freudenberg take over the Gala® brand for the Indian market.

With the 2009 launch of the Low Emission Sealing Solution Program (LESS), Freudenberg offers numerous innovative sealing solutions for the reduction of CO<sub>2</sub> emissions in vehicles. These extend from reduced-friction Simmerrings®, encoder technology for fuel-saving start-stop systems, innovative materials for transmission seals and weight-reduced housing elements, through to pressure-resistant sealing solutions for engine downsizing.

With the acquisition of SurTec in Zwingenberg, Germany, in 2010 Freudenberg Chemical Specialties expands its portfolio to include a fourth pillar: surface finishing. In 2013, the business is expanded through the acquisition of the shares of Capol GmbH in Elmshorn, Germany, a manufacturer of glazing and release agents for the confectionery industry.

Further strategic milestones:  
 ground-breaking innovation to save resources  
 Pioneering innovation in wound care  
 Further expansion of household products in Asia

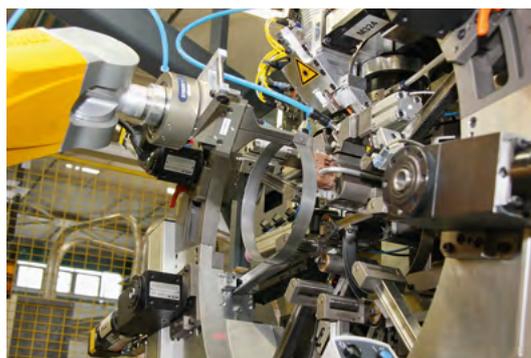
2011

The creation of the new Business Groups Freudenberg Oil & Gas, Helix Medical and Freudenberg Schwab on January 1, 2011 is a clear indication of Freudenberg's plans for strategic growth. As part of its buy-and-build strategy, the company subsequently introduces new technologies to support these Business Groups. 2012 sees the acquisition of Med-Venture, which adds minimally invasive surgery solutions to the company's medical devices portfolio, while the acquisition of Cambus Medical allows Freudenberg to supply high-precision hypotubes and micro-component devices for technologically advanced catheter systems. The acquisition of Vector Technology Group in 2013 makes Freudenberg Oil & Gas one of the leading manufacturers of seals and sealing solutions for the upstream segments of the oil and gas market.

In 2011, Freudenberg is awarded the German Innovation Prize as well as the German Innovation Prize for Climate and Environment for its ground-breaking narrow strip-forming laser welding (SUL) technology as part of the Simmerring® production process. This cutting-edge resource-efficient technology developed by Freudenberg for the production of metal rings eliminates waste almost completely from the production process.

The bioresorbable, i.e. biodegradable, scaffolene® nonwovens is a pioneering innovation in wound care. Scaffolene® nonwovens can be enriched with active ingredients such as antibiotics and enzymes. In compliance with clinical requirements for local therapy, the active pharmaceutical ingredients are released in the process of the diffusion and disintegration of fibers.

In 2011 Freudenberg Household Products takes over the operative business of Trade & Investment in Asia Limited (TIA) with locations in China, Hong Kong, Thailand, Indonesia, Malaysia and Taiwan as well as the swash® brand.



*SUL plant at the Weinheim HQ, 2011*



*scaffolene® nonwovens for wound care, 2011*

Reorganization of corporate structures

TrelleborgVibraoustic  
Joint Venture established

LESS program expanded

2012



Elastic Drive Shaft Coupling from Vibraoustic,  
2011



Levitex® seal, 2012

2012 sees the reorganization of Freudenberg's corporate structures with the aim of making them simpler and more transparent. Freudenberg & Co. Kommanditgesellschaft (limited partnership) remains as the Group's strategic parent company. Under its umbrella, Freudenberg SE is formed as a second operative parent company to take on overall responsibility for managing business operations.

Dr. Mohsen Sohi becomes Speaker of the Freudenberg Group's Management Board, succeeding Dr. Dr. Peter Bettermann, who has led the company for 15 years. Like his predecessor, Dr. Sohi is not a member of the Freudenberg family.

The same year sees the creation of the TrelleborgVibraoustic Joint Venture, which brings together the vibration control technology business of the Freudenberg subsidiary Vibraoustic and the Swedish Trelleborg Group.

The LESS program is extended. The new Levitex® crankshaft seal comes very close to the vision of a frictionless seal. This mechanical seal creates an air cushion and reduces CO<sub>2</sub> emissions from vehicles by reducing friction.

Freudenberg Sealing Technologies acquires 50 percent of the shares of the Schneegans Group. This gives the company expertise in multi-component injection molding for creating pioneering plastic products, in particular for the automotive industry.

● FOKUS 2.0  
First steps into  
water treatment

○ 2013

● UN Global Compact Initiative  
Expansion of the sealing business  
40,000 employees

○ 2014

In 2013, the FOKUS 2.0 project marks a strategic reorientation to future-proof the organization of Business Groups, Corporate Functions and the Freudenberg Regional Corporate Centers. The FOKUS 2.0 organization is aimed at strengthening the Business Groups' commercial focus on market and customer requirements as well as their innovative potential while improving efficiency for standardized tasks across the Freudenberg Group. The global Business Groups are still the key operative pillars.

In the same year, Freudenberg Filtration Technologies acquires Aqua-bio Limited, a British company. The move makes Freudenberg a supplier of water treatment and wastewater filtration systems for industrial applications, e.g. for treating waste-water in production processes. The membranes used in the process reliably filter contaminants and bacteria. Reverse osmosis and disinfection can transform up to 70 percent of wastewater into drinking water. This reduces energy consumption, operating costs and CO<sub>2</sub> emissions.

In the same year, the Freudenberg Households Products Business Group is renamed Freudenberg Home and Cleaning Solutions.

In early 2014, the Freudenberg Group joins the Global Compact initiative launched by the United Nations, which commits signatories to adopt values-oriented and sustainable business practices.

With the acquisition of the family business Tobul Accumulator Inc., a leading worldwide developer and manufacturer of hydraulic accumulators, the sealing business is expanded and the accumulator business strengthened.

The Freudenberg Group employs over 40,000 employees worldwide.



*The House of Excellence represents the most important pillars of success for the Freudenberg Group, status 2013*



*Freudenberg Filtration Technologies Viledon  
Aquabio filter plant, 2014*

Restructuring of the nonwovens business  
New brand positioning

2015



Nonwovens production at Freudenberg Performance Materials, 2015



The logo of the Freudenberg Group, 2015

With effect from January 1, 2015, the Business Groups Freudenberg Nonwovens and Freudenberg Politex merge to form the joint business group Freudenberg Performance Materials.

Freudenberg repositions its global brand. “Freudenberg is a values-based technology group that best serves its customers and society” is the core of the new positioning. A new brand architecture is created to support this goal. From now on, the company slogan “Innovating Together” is added to the company logo, reinforcing the new brand identity.

As part of the repositioning of the Group with its new global brand, the medical business of the Freudenberg business group Helix Medical is brought together under the new name Freudenberg Medical.

In the summer of 2015, Freudenberg launches its global e<sup>2</sup> (education and environment) initiative. It supports global aid projects, giving people access to training and jobs and promoting environmental protection.

At the end of the year, Freudenberg ends its involvement in its electronics business, which is turned over to its longtime joint venture partner NOK.

Freudenberg acquires the majority shareholding in the Japan Vilene Company joint venture. Effective from April 1, 2016, Japan Vilene Company becomes a new Business Group in the “Nonwovens and Filtration” Business Area. The shareholders are Freudenberg (75 percent) and Toray Industries (25 percent).

In 2016, Freudenberg acquires 100 percent of the TrelleborgVibracoustic joint venture for the manufacture of vibration control technological solutions in the global automotive and commercial vehicle industry. The company is renamed Vibracoustic and managed as an independent Business Group. In return, Freudenberg sells the Schwab Vibration Control business for industrial vibration technology to Trelleborg AB.

Focus on new mobility technologies

2018

Expansion of the filter business

2019

Between 2016 and 2018, strategic acquisitions strengthen Freudenberg Home and Cleaning Solutions' market position. The acquisition of the Italian company, Gimi, expands the laundry care business. The company also gains market leadership with the acquisition of Playtex®, an American household glove brand and E.D. Oates, a professional cleaning business market leader in Australia.

In early 2018, Freudenberg starts expanding decades of know-how in developing technologically sophisticated components for fuel cells and batteries. Freudenberg strengthens its strategic position in alternative drive technologies by acquiring a stake in the Munich-based fuel cell manufacturer Elcore and a majority holding in the battery manufacturer XALT Energy. Alongside series production of key components such as gas diffusion layers and seals for fuel cell stacks, Freudenberg plans to become a supplier of complete electric drive systems for heavy commercial vehicles, particularly buses, trains, trucks and ships: this includes complete battery systems and highly efficient mobile fuel cell systems – including all the components, modules and subsystems needed for operation.

In early 2019, the Canadian ERP specialist, Syntax, acquires FIT (the Freudenberg IT) Business Group which focuses on SAP applications, to prepare FIT for the future.



Fuel cell test bench at Freudenberg Sealing Technologies, 2019

Expansion of the filter and nonwovens business  
Further strategic milestones in medical technology

2019



Filter production at Freudenberg Apollo Filtration Technologies in China, 2019



Composer® Steerable Introducer

In 2019, Freudenberg Filtration Technologies acquires 75 percent of the shares in Apollo Air-cleaner Co., Ltd. The company is a leading provider of air and water filtration solutions in China. Freudenberg Filtration Technologies then focuses on three areas: Automotive, Industry and “Living”.

Freudenberg acquires a Slovenia-based company, Filc, which specializes in the production, coating and lamination of needle-punched nonwovens for the automotive and building industries. Knowledge transfers make it possible to further develop an innovative product for car interiors – acoustic pads from Freudenberg Performance Materials – to the series production stage.

Freudenberg also expands its nonwovens portfolio the following year, acquiring London, UK-based Low & Bonar PLC, a global manufacturer of technical textiles.

Based on demographic trends signaling an aging society, demand increases for applications and solutions in the medical technology field. Freudenberg continues to develop the market systematically with acquisitions and innovative applications.

In 2019, Freudenberg Medical brings out the Composer® Steerable Introducer, a device to guide catheters. Its patented platform technology opens up new prospects for medical technology since it can be employed with the various catheter designs and sizes used in minimally invasive interventions. This high-tech tool represents an important advance for early screening and therapeutic procedures, such as the placement of heart implants.

The corona pandemic and its consequences for the company  
Driving forward digital product solutions

2020

The Covid-19 pandemic has an impact on the Freudenberg Group's business development. There is a short-term drop in sales. But the situation improves over the course of the year. To keep employees healthy in the workplace, the company quickly makes mouth-and-nose masks available to them. Many of them come from the company's own production facilities in Japan, China, Germany and the United States. Employees are asked to work from home early on to minimize the risk of infection. This enables the company to continue to operate under lockdown conditions. Digital and mobile forms of communication are promoted extensively during the Covid-19 pandemic: home offices, videoconferences, collaboration on projects over the Internet – work becomes more flexible and new forms of cooperation emerge.

The steady advance of digitalization transforms the world of work with new business models, production processes, and changes in work activities and procedures. Freudenberg pursues digitalization projects with the goal of increasing the benefits to customers in the digital age and improving internal processes with increases in quality and efficiency.

The smart seal sensors developed in 2020 for EagleBurgmann mechanical seals are an example of Freudenberg's digital predictive maintenance solutions. The three-in-one sensors, which measure temperature, pressure and vibration, allow the comprehensive monitoring of mechanical seals at work. The result is an improved understanding of processes and the implementation of condition-based approaches to maintenance. Mechanical seals 4.0 emerge with the automated readouts of measured data. The range of new digital applications and products at Freudenberg continues to grow in every business field.



*Employees with masks produced by the company, 2020*



*Readouts of data captured by a smart seal sensor for monitoring a mechanical seal, 2023.*

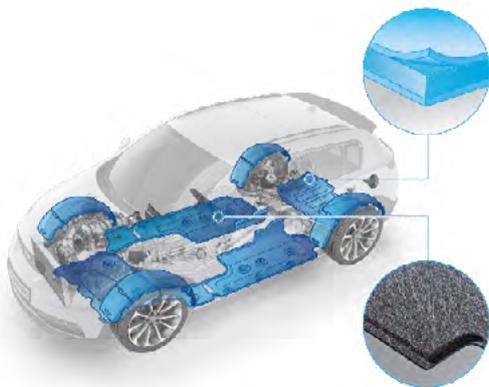


Photovoltaic system on the roof of the Freudenberg Filtration Technologies factory buildings in Shunde, China, 2022

In 2021, Freudenberg Filtration Technologies expands its business in filters for residential buildings with the acquisition of the American filter manufacturers Protect Plus Air Holding Incorporated, in Hickory, North Carolina, and RPS Products in Hampshire, Illinois, which sells filters for residential and office buildings under the brand name BestAir. The revenues from both acquisitions are consolidated in the new “Residential & Commercial” business unit. The Business Group is now organized into four divisions: Automotive, Consumer, Industrial, and Residential & Commercial.

In the same year, the company’s largest filter manufacturing site goes into operation at its Shunde, China facility. Its special feature: With its own 9,500-square-meter photovoltaic system, the facility produces about 2 million kilowatt hours of electricity per year. The capacity makes it possible to meet about 20 percent of the site’s needs, reducing CO2 emissions.

Climate change, resource shortages, and growing urbanization pose major challenges to the automotive industry. Among other issues, the sector focuses on the electric-mobility trend, which Freudenberg continues to help shape as a supplier. Freudenberg offers safety-related innovations for electric vehicles such as heat shields and fire-resistant seals for batteries. Furthermore, the company develops innovative vibration control solutions to meet the requirements of electric vehicles, special technical nonwovens to reduce weight, and special lubricants for new powertrain concepts.



Textile underbody paneling made of nonwovens from Freudenberg Performance Materials is lightweight and absorbs sound.

## Reorganization of portions of the sealing business

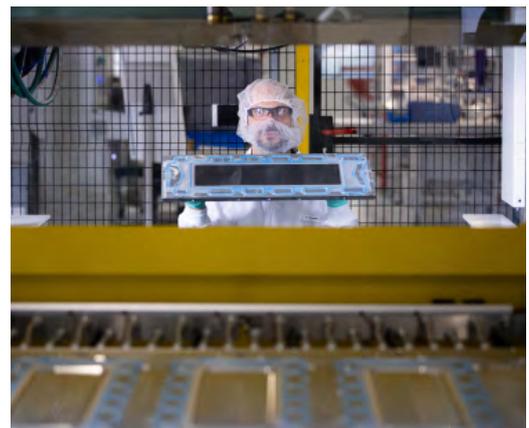
2024

Freudenberg focuses on fuel cell powertrains for ships and heavy-duty vehicles. It also positions itself for changes in these segments with its new Business Group Freudenberg e-Power Systems (FePS), which is founded on April 1, 2022. FePS consolidates the battery and fuel cell activities of Freudenberg Sealing Technologies and its joint venture XALT energy. Freudenberg also acquires XALT Energy in its entirety on January 1, 2023. In 2022, the company becomes the first manufacturer to receive the “Type Approval” safety certification for a methanol fuel cell propulsion system for oceangoing ships from the international classification firm RINA. The technology enables the climate-friendly, efficient and safe operation of fuel cell systems in oceanic shipping.

In the same year, the company decides to bring its TANNER program to an end due to safety concerns. In the era of Covid-19 and a growing number of world crises, the rationale is to avoid exposing young people to unforeseeable risks.

The Freudenberg Group has more than 50,000 employees worldwide.

Effective from January 1, 2024, Freudenberg forms a new Business Group: Freudenberg Flow Technologies. It consolidates the Business Groups EagleBurgmann and Freudenberg Oil & Gas Technologies, with the goal of optimizing sales synergies for long-term sealing solutions, in the oil and gas, energy, petrochemical, pharmaceutical, food and beverage, and water segments.



*The production of fuel cell components for heavy-duty vehicles at Freudenberg e-Power Systems, 2023*

# HISTORY OF THE FREUDENBERG LOGO



1874

The first company logo, introduced in 1874, is a tanner's coat of arms. This coat of arms which dates from the Middle Ages shows the tools of a tanner, with a shaving iron (used to ensure uniform thickness) in the center, a flesh scraper (for removing flesh from the underside of the hide) on the right and a hair scraper (for removing the hair from the hide) on the left. These tools are flanked by two lions symbolizing the company's claim to leadership.



1933

When Freudenberg starts to manufacture other products in 1929, the medieval coat of arms is no longer appropriate. In the search for a new logo it is decided to combine the initials of the company's founder Carl Freudenberg with the first letter of Weinheim, where the headquarter of Freudenberg is located. The CFW logo is introduced in 1933.



1950

In 1950 the Freudenberg logo is redesigned.



1970

The words "Carl Freudenberg" are added in 1970.



1983

As Freudenberg becomes increasingly international, the "W" for Weinheim in the logo no longer reflects the nature of the Group. Therefore, the Freudenberg name is incorporated into an integrated logo in 1983. The wave at the bottom edge of the logo reflects the sine curve shown on the instruments used for ensuring the quality of Freudenberg technical products.



1990

In 1990 the logo is slightly adapted.

In 2015, Freudenberg repositions its global umbrella brand. “Freudenberg is a values-based technology group that best serves its customers and society” is the core of the new positioning. This expresses Freudenberg’s aspiration to be a technology leader and to contribute, through top-quality products and solutions, to the success of its customers and to the good of society. The new logo includes the corporate slogan, “FREUDENBERG. INNOVATING TOGETHER”. The capitals represent the strength of Freudenberg as a global player. The sine curve remains a symbol of Freudenberg’s commitment to technical expertise and excellence. Through the new positioning, the curve acquires “wings”. The wings stand for openness and increased dynamism, and symbolize partnership and togetherness. At the same time, the new visual element of the logo can also be seen as a bridge representing increased cooperation with all stakeholders as well as reliability and stability.

2015



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