



Environmental Technologies and Recycling

Ecological. Economical. System solutions.

Turning Ideas into Reality.


Ferrostaal

Environmental Technologies and Recycling

Adding value to your business



The efficient use of environmental technologies solves ecological challenges with economical benefits: the sustainable use of natural resources is an answer to problems such as the scarcity of raw materials and water. Based on the increasing demand for raw materials and environmentally sound solutions, the economical use of resources meets economic objectives. This combination turns the use of environmental technologies into a sustainable solution – both ecologically and economically.

The recovery of raw materials through recycling is an especially sustainable type of value creation. An extremely wide variety of materials can be re-processed and then secondary raw materials recovered can be re-used. Recycling is a consistent approach to the environmentally conscious optimisation of the value added chain. With this approach, we also meet ecological and business requirements in the treatment of water and air by means of the effective use of state-of-the-art environmental technologies.

As a system integrator with worldwide operations, we are technology-independent and develop the best solutions for the requirements of our customers. Our offers to institutions and industrial companies provide impressive results derived from an optimal combination of advanced technologies together with our full range of services along the entire process chain.



Ferrostaal is a provider of systems, machines and service solutions in the field of environmental technologies and recycling covering the whole supply chain.

Individual Solutions for global Needs

Value through independent service partner



Every year, 60 billion tonnes of raw materials are consumed worldwide, and the trend is increasing. Nature's ability to regenerate is far below the global economy's growing need for resources. Environmental technologies and recycling represent an efficient approach to handling raw materials sustainably.

The implementation of environmental protection policies poses a challenge to many governments and regions. Measures to reduce greenhouse emissions or provisions for ensuring a constant supply of drinking water are often regulated by statutory requirements. As a full-service provider with expertise in international plant and equipment construction, we offer you sustainable solutions in the field of environmental technology and recycling.

The recycling market is growing along with the global economy, especially in emerging markets, because recycling is an important strategy to reduce raw material consumption. Due to their cost-savings potential and their energy efficiency, secondary raw materials are particularly attractive for processing companies. Raw materials are used beyond the life cycle of a product by reprocessing them and incorporating them in further production processes.

For our customers from the recycling sector, this represents an enormous business potential: worldwide the amount of recycled material used as a share of all raw materials consumed is growing continuously. 55 percent of the world's aluminium requirements, for example, is already covered by secondary aluminium. As a technology-independent services partner to the recycling sector, we help our customers achieve the most efficient solution for their recycling processes.

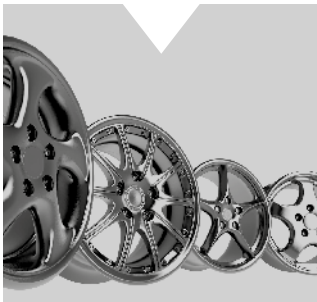
Machine and system portfolio

With our consulting expertise as technology-independent partner, we create added value through customer-focussed solutions:

- A synergistic combination of extensive experience in the machinery sector and a worldwide network of experts gives us the breadth it takes to find just the right machine to boost your company's value creation chain.
- The individual machines and system solutions in which we specialise are supplied by well-known manufacturers, and their modular configurations can be rapidly installed and adapted to carry out all of the processing steps required in the field of recycling and environmental technologies. This applies to the entire chain, from downstream processing to the application of new end products such as floor coverings and complementary machinery.
- Our product portfolio of innovative suppliers features broad flexibility in terms of the input material to be processed and the fractional size of the output material. The variety of end products is just as varied as the individual needs of our customers themselves.
- Along with reducing their energy requirements, we also enable our customers to lower their processing and maintenance costs with user-friendly, efficient and highly automated plants.

Recycling

Making raw materials reusable for your business



Aluminium Recycling

Every year, consumers empty 1.9 billion aluminium beverage cans which represent a potential source of input material for aluminium recycling. This is one of many examples of the profitable and energy-efficient recycling of aluminium, because the reprocessing of aluminium requires just 5 percent of the energy required during the initial production.

Our machine solutions can be used to process soft and hard aluminium material, sheets, blankets, litho (loose condition), castings, turnings, foils and other materials. The output material is suitable for secondary aluminium, aluminium granules and aluminium drops for deoxidation purposes.

Cable Recycling

The worldwide volume of cable waste is enormous and offers a huge potential. The recycling of cables is worth the effort because the extracted materials suffer no loss of quality. Along with aluminium or copper, plastic can also be recovered through cable recycling.

Our machine solutions can carry out all of the processing operations along the entire length of the value added chain of cable recycling.

Tyre Recycling

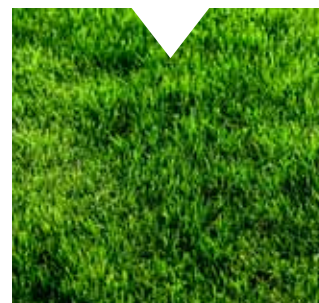
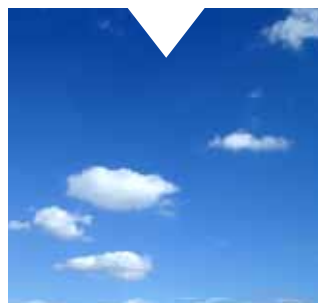
Asphalt, floor coverings for playgrounds and sports fields, insulation materials, wheels and shoe soles – these are some of the application fields for recycled rubber from tyres. Each year, millions of tonnes of end-of-life tyres are collected and refined into rubber granulate, steel scrap and textile fraction in our recycling plants – the starting material for a wide range of new products. Another application of pre-chopped tyres is the use as secondary fuel in cement mills.

WEEE and Refrigerator Recycling

The recycling and re-use of WEEE (Waste Electrical and Electronic Equipment) products is a top priority, because doing so contributes significantly to environmental protection. Some 40 million tonnes of electrical waste materials are produced worldwide annually – waste products from which materials such as aluminium, copper, gold, silver and platinum and other materials can be recovered. Refrigerators can also be separated into these raw materials and recycled using state-of-the-art technologies to process chlorofluorocarbon (CFC) and other gases, a contribution saving the ozone layer.

Environmental Technologies

Sustainable treatment of natural resources



Wastewater Treatment

In a large number of emerging countries, nearly 90 percent of everyday wastewater goes untreated – and the quantity of wastewater is increasing along with economic growth.

Together with our partners, we offer a variety of solutions for the sustainable treatment of waste and process water, so that it can then either be used in industrial applications or discharged clean into the public sewerage systems. Our solutions answer our customers' needs, varying in size and capacities.

Odour Control

In order to purify the air in the vicinity of water treatment plants and production facilities, Ferrostaal offers treatment plants for odour control and off-gas. There are two main types of odour control systems: photoionisation system for off-gas and odour treatment and activated oxygen units (also known as ionisation units or corona discharge units) for indoor air treatment.

Mercury Recycling

Light bulbs, fluorescent tubes and computer and television screens contain mercury – a metal which requires a very specific type of recycling.

Ferrostaal supplies two types of mercury distillers – batch distillers and continuous process distillers – which can be selected on the basis of the waste and volume to be processed.

Always on the Spot

Supplying services and machines along the value chain



With our decades of experience we support you in developing projects in the area of Environmental Technologies and Recycling which are economically worthwhile on a long and short term basis. In some cases, the ROI (Return on Investment) is less than one year which marks out the profitability of our machines and system solutions.

From Consulting to Up and Running

Our customers profit from our know-how from the very beginning. As a strong supplier-independent partner we stand by our clients every step of the way, from the idea to the feasibility study and technical consulting all the way to ultimate implementation. In the project development phase, we set criteria and develop strategies, finding a cost-effective system solution complying with your needs. In the engineering phase together with our partners, we provide full access to our technical expertise when planning each plant for your recycling or environmental technology needs. As a technology independent service partner, we implement flexible and innovative equipment and system solutions.

Equipment Financing

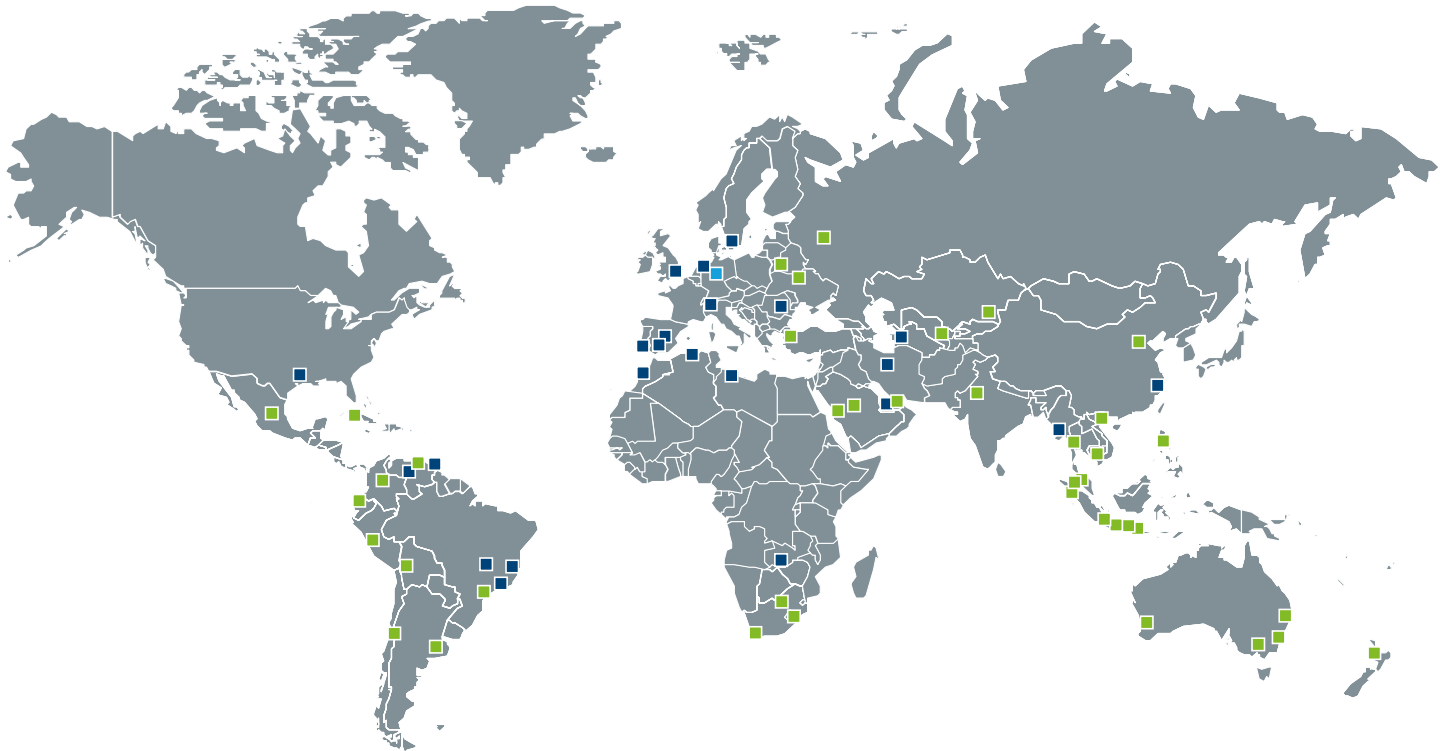
Offering everything from one single source is one of our key assets. Besides technical offers, we also provide financial solutions for your recycling equipment needs. We support the purchasing of machines and process lines, managing all the interfaces.

After Sales Services

The contact with our clients goes far beyond putting the recycling plant into operation. We are on the spot when you would like to enhance the machines with additional components or do a technical upgrade, giving you technical assistance and further services from a one-stop shop. Besides the supply of spare parts, our After Sales Services also include regular maintenance of the installed equipment.

Ferrostaal

Close to you



 **Ferrostaal Equipment Solutions /
Environmental Technologies and Recycling Network**

 **Ferrostaal
Headquarters**

 **Ferrostaal Locations
Worldwide**

Ferrostaal acts as an independent sales and service partner with machines and installations in Environmental Technologies and Recycling, Graphic Arts, Plastics, Packaging as well as in Energy and Drive Technology.

Our worldwide organisation has built a solid business in the industrial equipment sector, which allows us to have a long-term and continuous presence in more than forty countries. On the basis of this presence and about 5,300 employees worldwide, we interlink our global and regional know-how in our joint work with customers and partners from all relevant economic sectors.

In the areas of industrial plants for the segments of Petrochemicals, Power, Solar, Oil & Gas and Special Projects, Ferrostaal is a technology-independent system integrator, offering industrial services in plant construction and engineering.

Contact

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