Sandvik Process Systems — your partners in Industrial Processing
Sandvik – a global family of innovative market leading companies

Sandvik is a high technology engineering group with advanced products and world-leading positions in selected areas: tools for metalworking, machinery and tools for rock excavation, stainless steel, special alloy metallic and ceramic resistance materials as well as process and sorting systems. The Group has 37,000 employees in 130 countries, with annual sales of approximately USD 6 billion.

Sandvik Materials Technology
Sandvik Materials Technology is a business area within the Sandvik Group and a world-leading manufacturer of added value products in stainless steel, special alloy, metallic and ceramic resistance materials, as well as process and sorting systems. The five product areas within Sandvik Materials Technology are Tube, Strip, Wire, Kanthal and Process Systems.

Quality Assurance
Sandvik Materials Technology has a quality management system approved by internationally recognised organisations. For example, we hold ASME Quality System certification, approval to ISO 9001 and QS 9000, as well as approvals from LRQA, JIS and other organisations as a materials manufacturer.

Environment
Environmental awareness is an integral part of our business and is at the forefront of all activities within our operation. We hold approval to ISO 14001.
Sandvik Process Systems is a key product area within Sandvik Materials Technology, with particular expertise in the manufacture of steel belts and press plates, and the design, manufacture and installation of steel belt systems for chemical and food processing plants.

This brochure focuses on our Industrial Processing solutions, providing an introduction to the range of services we offer; the technical support we can provide and the experience we have gained in the design of process solutions as diverse as:

- Granulation (flaking and pastillation) directly from the melt into solid
- Single & double belt systems for film/sheet casting and sheet moulding
- Steel belt coolers/dryers/freezers
- Conveying systems

Whether your business is in chemicals, plastics, oil, gas or food, we can help you compete through innovative products, imaginative engineering and a worldwide service support network.
Sandvik steel belts around the world

Sandvik steel belt technology forms the basis for all our belt systems and delivers a range of inherent benefits.

- Hard and smooth surface
- Temperature resistant
- Corrosion resistant
- Easy to clean
- Endless weldable
- Wear resistant
- High thermal conductivity
- High tensile stress resistance
- Easy to repair

Practically all Sandvik standard steel belts are suitable for belt processing applications, and we can incorporate a full range of special designs to satisfy particular requirements.

- Various grades of stainless or carbon steel
- Polished or plated surfaces
- Perforations
- Longitudinal welding (for belt widths > 1.5 m)

Sandvik steel belts – solutions tailored to your processing requirements

- Ideal for processing of liquid, pasty, sticky or corrosive products
- Ideal base for continuous production, as several processes can be performed in one system
- Environmentally-friendly production due to excellent heat transfer and short exposure of product to atmosphere
- Efficient handling as steel belt allows easy access, handling and service
- Recyclable, because steel belt can be remelted
Process applications

The proven performance and versatility of the steel belt, combined with the efficiency of our purpose-designed process solutions, make Sandvik Industrial Processing systems suitable for a range of different applications:

**Film/sheet casting, sheet moulding**
We produce a range of solutions – based on both single and double belt systems – for the casting of products as diverse as films, sheets, plates and membranes. Areas of specific expertise include double belt presses for continuous sheet moulding and lamination.

**Freezing**
Steel belt systems are the ideal carrier for products that need to be frozen. Most applications are found in the food industry for products such as vegetables, fruits, seafood, meat and instant coffee.

**Granulation/pastillation**
Granulation plant for direct granulation in one step from melt to solid. This is an extremely environmentally friendly granulation solution and delivers end product in the form of flakes or pastilles. The most efficient of all is the Rotoform system, a combination of steel belt cooler and feeding system.

**Drying**
The solid steel belt – or the perforated steel belt – provides the ideal base on which a wide range of sticky, abrasive, liquid or pasty food or chemical products can be dried.

**Conveying**
The inherent strength and durability as well as the hygienic properties make the steel belt the ideal base to convey hot, cold, corrosive, abrasive and heavy products. Recent applications for Sandvik steel belt conveyors include car bodies (for painting), light bulbs and plastic components (at 200°C), coffee mass (at -45°C) and clean goods such as DVD packaging and medicine bottles.

**Cooling**
Sandvik steel belt cooling systems (single and double belt) are designed for continuous production in the chemical, food and plastics industries.
The experience we have built up in turnkey project management enables us to provide a complete end-to-end service, employing proven skills and technologies to maximise your return on investment.

Our service extends from feasibility studies, test and pilot production, through engineering, manufacturing, supply and erection, to commissioning, start-up and handover of your plant, ready for full production.

The Sandvik package of supply and services:

- Feasibility studies
- Engineering and project management
- Manufacturing and supply
- Commissioning and handover

Feasibility studies
Manufacturing and supply
Engineering and project management
complete process solutions from a single source
Our application-oriented, steel belt-based processes enable us to meet the most rigorous process and product requirements.

Our speciality is the granulation of chemicals – directly from the melt into solid – in the form of pastilles, micropastilles, flakes and strips.

The key advantages of our granulation technology are:

**1. High efficiency**
Direct from melt into solid in one step

**2. Environmentally friendly production**
- No contact between product and cooling media, therefore no contamination either way
- Cooling water is recycled, therefore no consumption of water
- No emissions into atmosphere
- Practically dust-free processing

**Double belt cooler for flakes**
The unique and patented Rotoform® process

Sandvik’s famous Rotoform family

The development of the Rotoform family has opened up new opportunities for the pastillation of virtually all types of chemical melt. Over a thousand different product types have been processed on this system; among the most common are sulphur, waxes, resins, rubber / plastic additives and agrochemicals.

Such has been the success of the process, more than 1100 complete Rotoform units have been installed around the world, for standard and special applications including:

- High temperature melts
- Abrasive, sedimenting, corrosive or subcooling melts
- High speed production
- Micropastille production

Whatever your application, however special, we have the answer!
Making use of steel belt technology, we offer a full range of solutions for chemical processing, with expertise in areas including:

- **Basic chemicals**
  - e.g. sulphur, waxes, bitumen, aluminium sulphate

- **Fine chemicals**
  - e.g. resin, caprolactam, bisphenol, hot melt adhesives, rubber chemicals, plastic additives

- **Specialities**
  - e.g. base materials for the pharmaceutical and cosmetic industries, photo chemicals, etc.

With such a wide range of experience, we can offer proven solutions for virtually any chemical processing requirement.

**Granulation of resins**

Sandvik granulation technology has proved a highly efficient and economical process for the granulation of all types of resin products. We offer a choice of two process types – flaking and pastillation – both of which are based on our proven steel belt technology.

Single or double belt systems can be specified according to the desired product shape, production capacity and available floorspace. In most cases, the double belt flaking system will prove the optimum solution for high capacity and environmentally friendly production requirements.

Our granulation technology is now the standard process for the solidification of all kinds of resins, even those that need to satisfy the strict purity and uniformity requirements of the electronics industry.

Our processes are suitable for all known resins, including:

- Acrylic resin
- Epoxy resin
- Hydrocarbon resin
- Phenolic resin
- Polyester resin

A few examples of the many thousands of potential applications:
Granulation of aluminium sulphate

Aluminium sulphate is used in large quantities in the paper industry and for the treatment of water. We supply complete systems for the production of this chemical, starting from the receipt of the base materials, through reaction systems to granulation and subsequent downstream processes.

Granulation of subcooling products

Some product melts require a controlled precrystallisation process before pastillation. Our supercooling process – a combination of a precrystallizer with Rotoformer and steel belt cooler – allows the efficient pastillation of these products in a continuous process.

Such is the proven performance and reliability of our supercooling process that it is now accepted as the standard solution for continuous and controlled pastillation of subcooling melts.

Typical applications for our supercooling process include:

- Agrochemicals
- Photo chemicals
- Plastic additives
- Rubber chemicals
- Stabilizers
Long-term support for the oil

With more than 30 years’ experience in this field, more than 250 plants supplied to date and an ongoing policy of steady development and process improvement, we are well established as a key partner to the oil and gas industry.

Among the central advantages of dealing with SPS IP is our ability to deliver complete, tailor-made solutions from initial design and implementation to installation and commissioning.

And our long-term partnership with key players in the industry means we are fully conversant with customer requirements at every level, from process efficiency and operational safety to minimising the environmental impact of our systems.

We have experience across the entire range of refined products, including the processing of:

- Sulphur
- Sulphur and additives
- Waxes
- Bitumen
- Pitch
and gas industry
Our close involvement with the plastics industry has resulted in the development of a whole range of different solutions – based on both single and double belt systems – for different product types.

Among the key benefits of our process technology for this sector of the market are the efficiency of continuous production, the advantages of environmentally-friendly processing and the versatility of being able to combine multiple processes in one plant (i.e. pressing, heating and cooling) without the need for intermediate handling.

As always, customers benefit from being able to source entire solutions – process and plant – from a single supplier.
artificial marble and paper industries

Typical applications include:

- **Pastillation**
  PET (base material for bottles); economical production of intermediate material

- **Drying**
  Plastic powder (high temperature; heating with radiation and air circulation; minimum contact with atmosphere)

- **Film casting**
  Membrane filter foil

- **Sheet casting**
  Artificial marble

- **Sheet moulding**
  Fibre composites GMT

- **Lamination**
  Sandwich production, insulation material
Specialist expertise and materials for the

In the food industry, where hygiene and ease of dismantling and cleaning are, along with process efficiency, critical requirements, our steel belt technology is at the heart of a wide range of systems.

With a comprehensive choice of the latest belt grades at our disposal, we are able to advise on the most appropriate material for the particular project. We can provide stainless steel belts for conveying and cooling systems; carbon steel belts for transportation applications; and perforated steel belts for highly efficient and hygienic drying systems.

Making full use of the in-built advantages of continuously operating steel belt systems and our overall group expertise in specially developed belts, we have developed solutions to suit virtually any food-related process application.

- Continuous steel belt cooling systems
- Rotoform systems for pastille production
- Contact freezers for meat, seafood and coffee concentrate
- Dehydration plants for fruit and vegetables
- Film/sheet casting lines
- Steel belt conveyors
More specifically, these process applications include:

- **Drying**
  The benefits of our drying systems include faster throughput times, lower bacteriological counts, optimum drying cycle profiles and reduced operating costs.

- **Cooling/granulation/pastillation**
  We offer a choice of three cooling systems: indirect water cooling, chilled air cooling and air flow-through cooling. All systems are delivered complete with integral feeding and discharge devices.

- **Storage/conveying**
  The high standards of hygiene that can be ensured through the use of a steel belt, together with easy cleaning and simple discharge, make it the automatic choice for applications as diverse as high capacity storage silos and chocolate and sugar conveyors.

- **Freezing**
  The combination of air blast freezing and the superb conductivity of the steel belt make Sandvik freezing systems first choice for reduced freezing times, consistently high product quality, low energy consumption and total hygiene.
Our commitment to global service

Today’s global marketplace requires constant evolution – new products and new, more efficient, processes – in order to maintain competitive edge. From the development of ever more productive systems to a worldwide service network, our entire R&D and customer support operations are focused on helping you to achieve just that.

- Steady development and improvement of processes and equipment
- Test and pilot production in our Demo Centers
- Aftersales service, anywhere in the world
- Maintenance contracts and preventative maintenance
- Spare parts supply and installation at short notice
- System upgrading and revamping

Patented technologies

Our continuing work on the development of new processes and products is reflected in the large number of worldwide patents and certificates issued by leading institutes and organisations. All our products and services are certified to ISO 9001 and 14001. Where appropriate, our products are also protected by international trademark.
Our Demo Centers – an extension to your own R&D facility

We’re committed to continual improvement and system development and we have established a network of technical Demo Centers to help you do the same.

These centers are home to our entire range of processes and equipment, enabling you to assess and test a particular system from lab scale up to pilot production. For any tests which cannot be performed in one of our centers, mobile units are available for quick and easy installation in your laboratory or plant.

Wherever the tests are run, our engineers talk your language. And they are there to help you check out our claims and promises … on your product.

And once you have become an Sandvik customer, you will find that this level of support is there throughout the lifetime of your plant, wherever in the world it is located.

Whatever your requirements and in whatever area – chemicals, plastics or food – you can look on our Demo Centers as just an extension of your own product development facility.

Sandvik Process Systems –
product center Industrial Processing

Sandvik Process Systems is a single source supplier of processing plants, steel belts and service.

We offer all the flexibility, responsiveness and customer focus of a mid-size company, backed-up by the strength and stability of the global Sandvik organisation.

- Research & development
- Engineering/project management
- Manufacturing/supply/installation
- Sales, spares & service

PC Industrial Processing – a worldwide operation with its headquarters in Fellbach, Germany.

SPS facilities in Totowa/New Jersey/USA (for Region America)

SPS facilities in Shanghai/China (for Asia Pacific Region)