**STADLER and TOMRA deliver the world’s first fully automated textile sorting plant**

**in Malmö, Sweden**

**Altshausen, 16 February, 2020** – STADLER and TOMRA delivered the fully automated sorting plant for Sysav Industri AB, which sorts pre- and post-consumer mixed textile waste in southern Skåne, in Sweden. STADLER designed and built the plant, while TOMRA provided the NIR sorters. The plant is part of the Swedish Innovation Platform for Textile Sorting (SIPTex) government-funded project, which aims to develop a sorting solution tailored to the needs of textile recyclers and the garment industry.

**Automated sorting: key to achieving a textile circular economy**

Sorting textiles according to the various types of fibers they contain requires a high degree of precision. It is currently done manually, but the result doesn’t meet the requirements of recycling companies and the fashion industry. As a result, only a small quantity of discarded textiles is recycled and the potential for increasing it is enormous. The SIPTex project is exploring how to achieve the required quality through automation.

**Testing the technology on textiles**

The plant in Malmö is the third phase in the SIPTex project, and follows an initial theoretical study and, in phase two, the construction of a small pilot plant in Avesta, also designed and supplied by STADLER and TOMRA in 2017. In this second phase, the project collected 700 tonnes of used textiles from recycling centers. Following a manual pre-sorting of reusable textiles, the waste material was fed into the Avesta pilot plant.

“Our main objective was to test our equipment’s capability to sort the textiles and identify any changes or optimizations to the process that may be required,” says STADLER International Sales Manager Urban Kozinc. “The main challenge was that automated textile sorting had never been done before. Working on this pilot plant we have understood that the feeding system is very important, that the hoppers and chutes need a special design because of the size of the textile material, and that the conveyors needed special belts. We also had to find the way to achieve a constant material flow, without peaks. And we learned that labelling on the textiles is not always 100% correct. In this phase of the project we gained the knowledge we needed for the third phase, the Malmö industrial-scale plant.”

**The world’s first fully-automated textile sorting plant**

The automated textile sorting plant in Malmö has a capacity of up to 4.5 tonnes/hour in one line. The incoming material is delivered in bales, typically weighting 350 to 500 kg. It includes pre- and post-consumer waste. The former consists of dry, industrial waste from textile producers such as clippings, yarn and rejects. The latter is made up of clothing and household textiles, which include unsorted material from separate collection from sources such as recycling centers, and manually pre-sorted and industrial waste from textile leasing and rental services. The material is sorted whole and may contain buttons, zippers and other non-textile parts.

The plant was entirely designed by STADLER in close cooperation with TOMRA. The project has included the supply of the dosing system, conveyor belts, NIR Optical Sorting Units, high-speed conveyor belts, bunker belts, baler, steelwork, electrical and control system, compressed air system and de-dusting system.

“In the Avesta pilot project we demonstrated that TOMRA´s NIR sorting technology is capable of recognizing and differentiating various types of textiles,” explains STADLER Project Manager Matej Fuerst. “In the third phase, our objective was to ascertain that the system we designed could successfully operate on an industrial scale, and that the output fractions can achieve the purity and recovery required for recycling and reutilization. There is no industrial-scale technology for recycling textiles without downcycling them, so we had to develop the complete sorting solution.”

Co-initiator of the project was TOMRA Sorting Recycling, a pioneering leader in sensor-based sorting technology, which supplied an AUTOSORT® NIR VIS sorter for the Avesta pilot, then four more for the Malmö plant. “Little research is so far available on the recycling of textile fractions. In order to be effective in sorting of pre- and post-consumer non-wearable textiles for recycling purposes, automated sensor-based sorting is the key. In this project, our technology has proved efficient in separating different textile fractions by material type and color. We are proud to be part of this pioneering work.” states László Székely, VP Head of Plastic Applications at TOMRA.

**Successful completion and operation**

The Malmö plant was handed over to Sysav Industri AB in mid-September 2020 and is currently in its initial phase of operation. STADLER has succeeded in demonstrating that industrial-scale automated sorting of textiles is possible: “The plant is fully automated: people are needed only to start and stop the plant, feed the material in, and take the bales from the baler. That’s it,” concludes Urban Kozinc.

Olof Linde, construction project manager of Sysav Industri AB, is impressed with the whole development and construction process: “We appreciate the good cooperation with STADLER and TOMRA, and are very proud that together we have been able to erect and start-up the plant under present conditions with the coronavirus pandemic. The employees from both STADLER and TOMRA have been extremely competent and dedicated to their task during this project. Even during this special pandemic time, we never felt any doubt that all our requirements would be met in the end.”

He feels that Sysav Industri AB has found the right partners for this project: “We feel that the plant is of high quality and it’s re-assuring for us that even though automated textile sorting is a new technology, the base concept has been developed and refined by STADLER and TOMRA in numerous existing plants. Building a world-unique facility requires stable and experienced partners.”

**Note to the Editors:**

The SIPTex project is funded by Vinnova, the Swedish government agency that administers state funding for research and development, and led by IVL, the Swedish Environmental Research Institute.

**About STADLER**

**STADLER®** is dedicated to the planning, production and assembly of sorting systems and components for the waste disposal and recycling industry world-wide. Its team of over 450 qualified employees offers a tailor-made full service, from conceptual design to planning, production, modernisation, optimisation, assembly, start-up, conversions, disassembly, maintenance and servicing of components to complete recycling and sorting systems. Its product range includes ballistic separators, transport conveyor belts, screening drums and label removers. The company is also able to provide steel structures and electrical switch cabinets for the plants it installs. Founded in 1791, this family-run company’s operation and strategy is underpinned by its ethos of delivering quality, reliability and customer satisfaction, being a good employer and providing strong social support.

For more information, visit [www.w-stadler.de](http://www.w-stadler.de/en/index.php)

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**About TOMRA Sorting Recycling**

TOMRA Sorting Recycling designs and manufactures sensor-based sorting technologies for the global recycling and waste management industry. Over 6,000 systems have been installed in more than 100 countries worldwide.

Responsible for developing the world’s first high capacity Near Infrared (NIR) sensor for waste sorting applications, TOMRA Sorting Recycling remains an industry pioneer with a dedication to extracting high purity fractions from waste streams that maximize both yield and profits.

TOMRA Sorting Recycling is part of TOMRA Sorting Solutions which also develops sensor-based systems for sorting, peeling and process analytics for the food, mining and other industries.

TOMRA Sorting is owned by Norwegian company TOMRA Systems ASA, which is listed on the Oslo Stock Exchange. Founded in 1972, TOMRA Systems ASA has a turnover of around €885m and employs ~4,500 globally.

For more information on TOMRA Sorting Recycling visit www.tomra.com/recycling or follow us on LinkedIn, Twitter or Facebook.

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