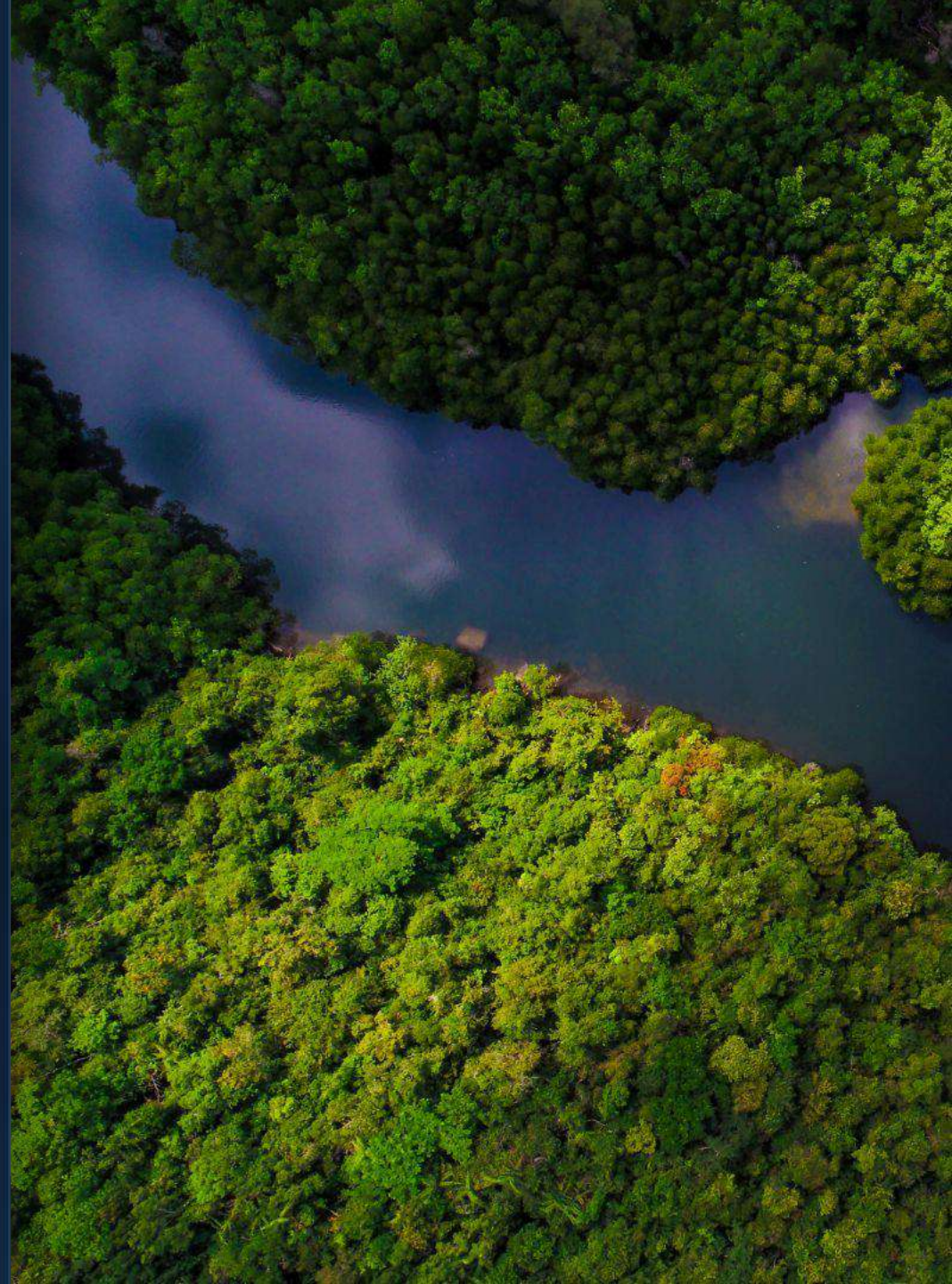
Leaders in zero waste

Recycling Technologies:

- **sorting and pre-treatment of waste,**
- **production of recycled materials,**
- **production of final products.**



Castor & Pollux

2025

530 kg

of waste produced per person per year

Europe generates 530 kg of municipal waste per person per year, with 50% recycled or composted and 23% still landfilled. There are significant differences in recycling practices across EU countries.

25%

reduced CO_2 production emissions for the last 13 years

From 2008 to 2021, there was approximately a 25% decrease in greenhouse gas emissions from manufacturing activities in the EU, partly due to improved circular economy practices such as repeated recycling and resource efficiency.

We contribute to the protection of natural resources

6 560 000 tons

of recycled plastic waste

In 2021, the total amount of plastic waste produced in the European Union was 16.13 million tons. Of this, approximately 6.56 million tons were recycled.

4 300 000

jobs in the circular economy industry

In 2021, circular economy sectors employed approximately 4.3 million people in the EU, representing an 11% increase since 2015.

Waste is not a burden, but a valuable renewable resource

Ideological motto of Castor & Pollux Group

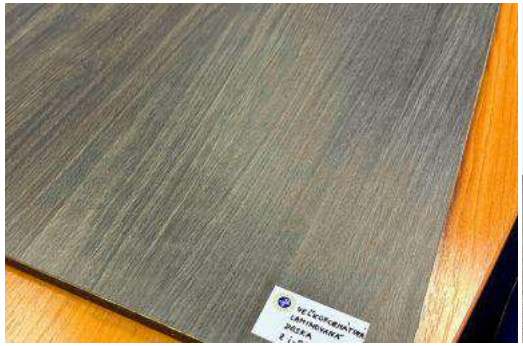
We recycle waste

innovatively and efficiently

Soft waste

We are able to process

(mixed plastic waste, RDF, composite waste
from industry, rubber, waste paper, wood waste and
biomass, insulation and textiles, etc.)

	RDF/Plastic	Insulation/Textil	Rubber	Biomass
WASTE				
RECYCLED MATERIAL				
FINAL PRODUCT				

Soft waste processing scheme

Waste pre-processing

Primary shredding up to 300 mm
Separation of metals and unwanted impurities
Secondary shredding up to 300 mm

Waste grinding - key technology

Waste dosing
High-speed mill
Classification of recycled material and air filtration

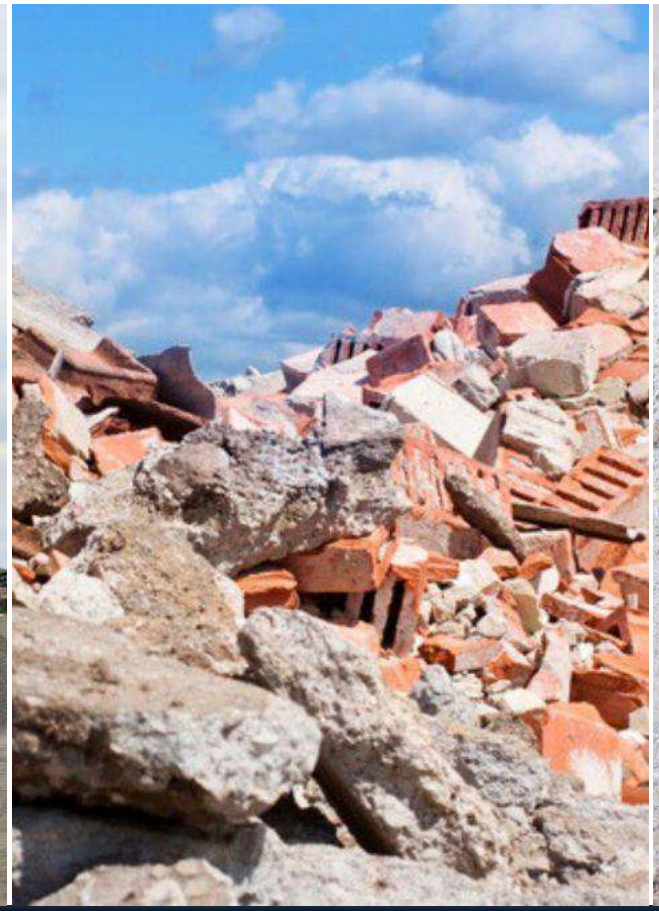
Product manufacturing

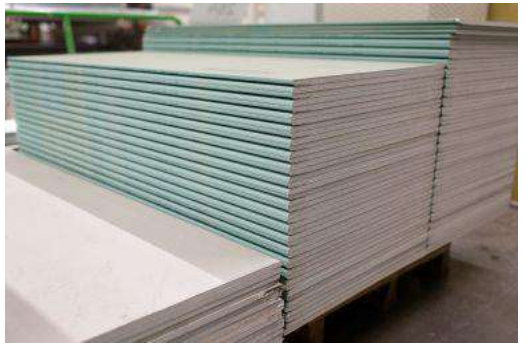
Pressing into boards, lamination, gluing into panels. Mixing with other raw materials, production of plastcrete. Extrusion with mineral waste, extrusion into fuel pellets.

Hard waste

We are able to process

(C&D construction and demolition waste, waste concrete, metallurgical slag, fly ash, bottom ash, plasterboard, glass, etc.)



	Construction waste	Concrete	Slag and fly ash	Plasterboard
WASTE				
RECYCLED MATERIAL				
FINAL PRODUCT				

Hard waste processing scheme

Waste pre-processing

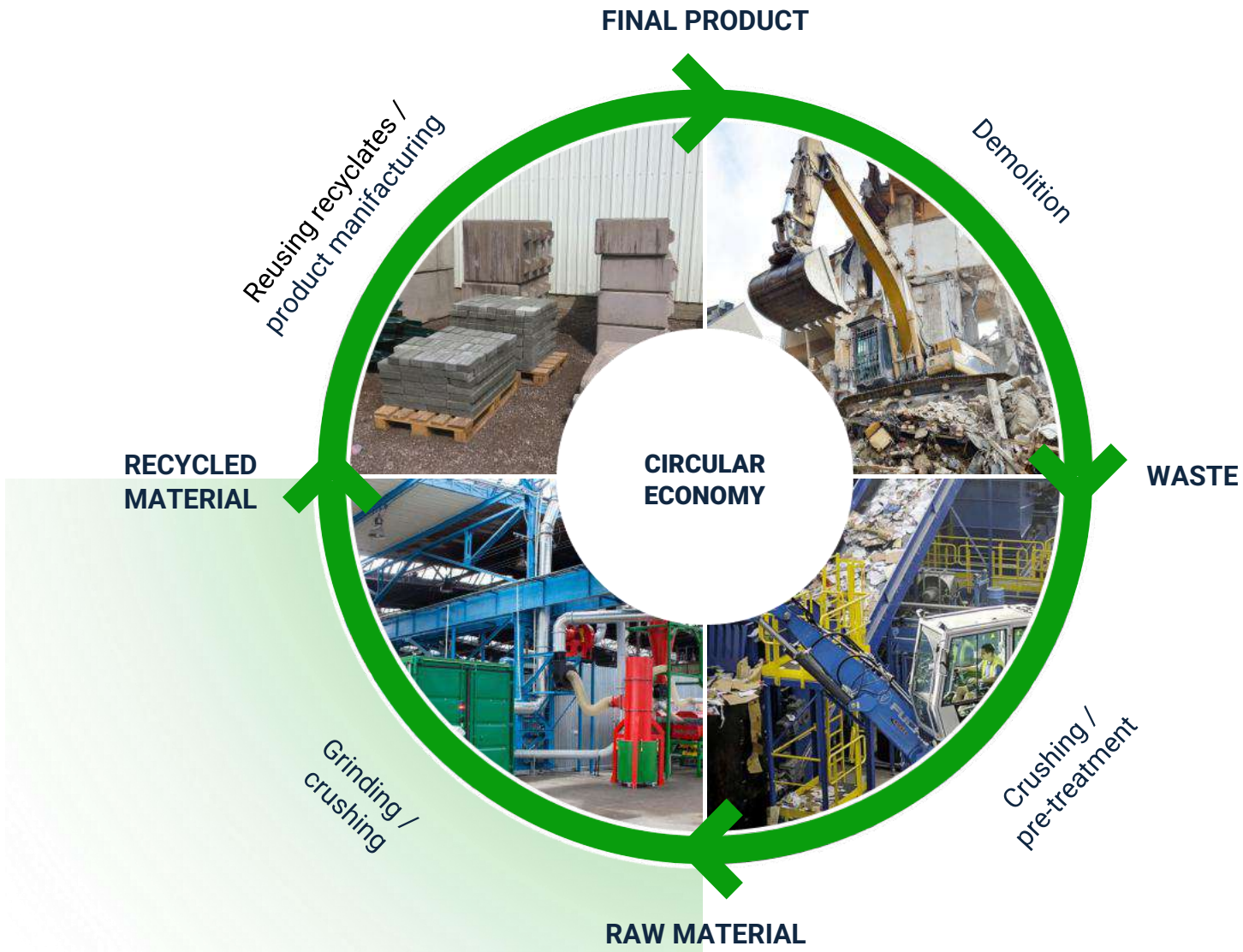
Primary shredding up to 100 mm
Separation of metals and unwanted impurities
Secondary shredding up to 10 mm

Waste grinding - key technology

Waste dosing
High-speed mill
Classification of recycled material and air filtration

Product manufacturing

Mixing with other raw materials
Extrusion with plastic waste
Vibropressing to construction products



High-speed mill - key technology of efficient waste recovery

- Lines contribute to reducing the ecological footprint
- Wide range of waste to process
- Quick return on investment
- High-speed mill - the heart of each line
- Homogenization, drying, mill and disinfection in one step
- Automatic fire protection system

Stationary Recycling Line

Suitable for large volume processing

SGD models

SBD models

Mobile Recycling Line

On-site waste processing

MRLM models

MRLT models

Mobile recycling lines and their parameters

Container design

Mobile Recycling Line for Soft Materials

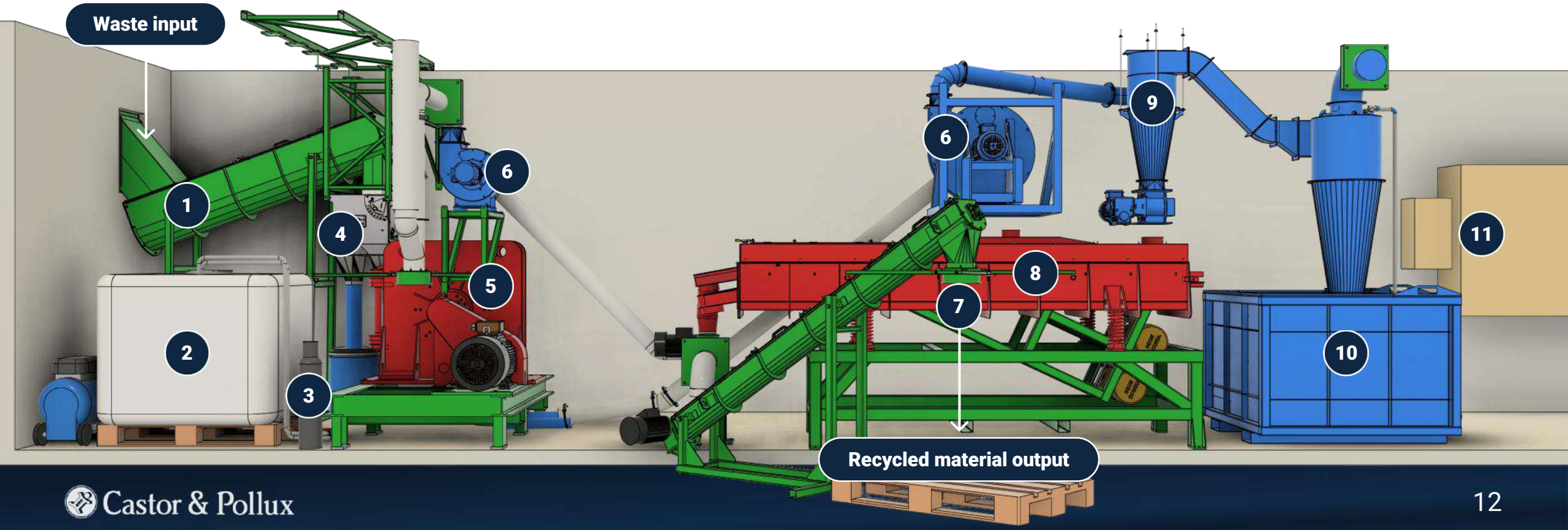
- Waste input size from 20 to 100 mm
- Recycled material output size from 2 to 10 mm
- Models MRLM200, MRLM300, MRLM400, MRLM550

Mobile Recycling Line for Hard Materials

- Waste input size from 5 to 20 mm
- Recycled material output size from 50 to 300 microns
- Models MRLT200, MRLT300, MRLT400, MRLT550

Mobile Recycling Line for Soft Materials

1. Input screw conveyor
2. Cooling
3. Fire protection system of the mill
4. Magnetic separator
5. High-speed multilevel mill
6. Transport fan
7. Recycled material output
8. Vibrating classifier - fineness of milling check
9. Cyclone separator
10. Water filter station
11. Electrical power switchboard/control system

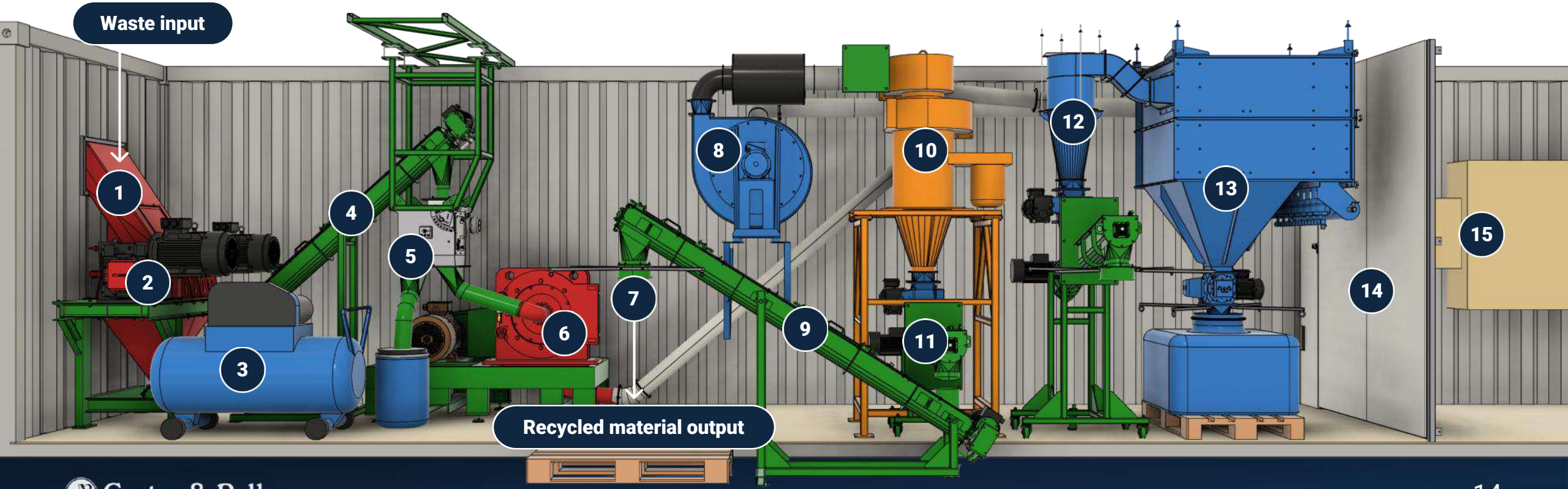


Parameters of the Mobile Recycling Line for Soft Materials

Parameter	MRLM200	MRLM300	MRLM400	MRLM550
Dimension LxWxH (**m**)	12 x 2.5 x 2.9	12 x 2.5 x 2.9	12 x 2.5 x 2.9	12 x 2.5 x 2.9
Total weight (**kg**)	3 400	4 100	4 900	5 300
Installed power (**kW**)	36	45	45	53
Rated RPM	12 000	12 000	10 000	8 500
Mill rotor diameter (**mm**)	200	300	400	550
Number of operators	1	1	1	1
Capacity rubber (**kg/h**)	150	250	300	400
Capacity plastic (**kg/h**)	180	250	300	400
Capacity textil (**kg/h**)	300	400	500	650
Capacity biomass (**kg/h**)	300	400	450	600

Mobile Recycling Line for Hard Materials

1. Waste input
2. Roller crusher
3. Compressor
4. Screw conveyor
5. Magnetic separator
6. High-speed multilevel mill
7. Recycled material output
8. Exhaust fan
9. External conveyor of raw material
10. Classifier
11. Screw conveyor from classifier
12. Cyclone separator
13. Air filter
14. Noise barrier
15. Electrical power switchboard/control system



Parameters of the Mobile Recycling Line for Hard Materials

Parameter	MRLT200	MRLT300	MRLT400	MRLT550
Dimension LxWxH (**m**)	12 x 2.5 x 2.9	12 x 2.5 x 2.9	12 x 2.5 x 2.9	12 x 2.5 x 2.9
Total weight (**kg**)	2 400	3 200	4 000	5 400
Installed power (**kW**)	21	28	35	38
Rated RPM	12 000	12 000	10 000	8 500
Mill rotor diameter (**mm**)	200	300	400	550
Number of operators	1	1	1	1
Capacity glass (**kg/h**)	250	450	650	1 100
Capacity construction and demolition waste (**kg/h**)	250	450	650	1 100
Capacity fly ash (**kg/h**)	350	500	750	1 400
Capacity cinder, crushed slag (**kg/h**)	250	450	650	1 100

Stationary recycling lines and their parameters

Hall design

Stationary Recycling Line for Soft Materials

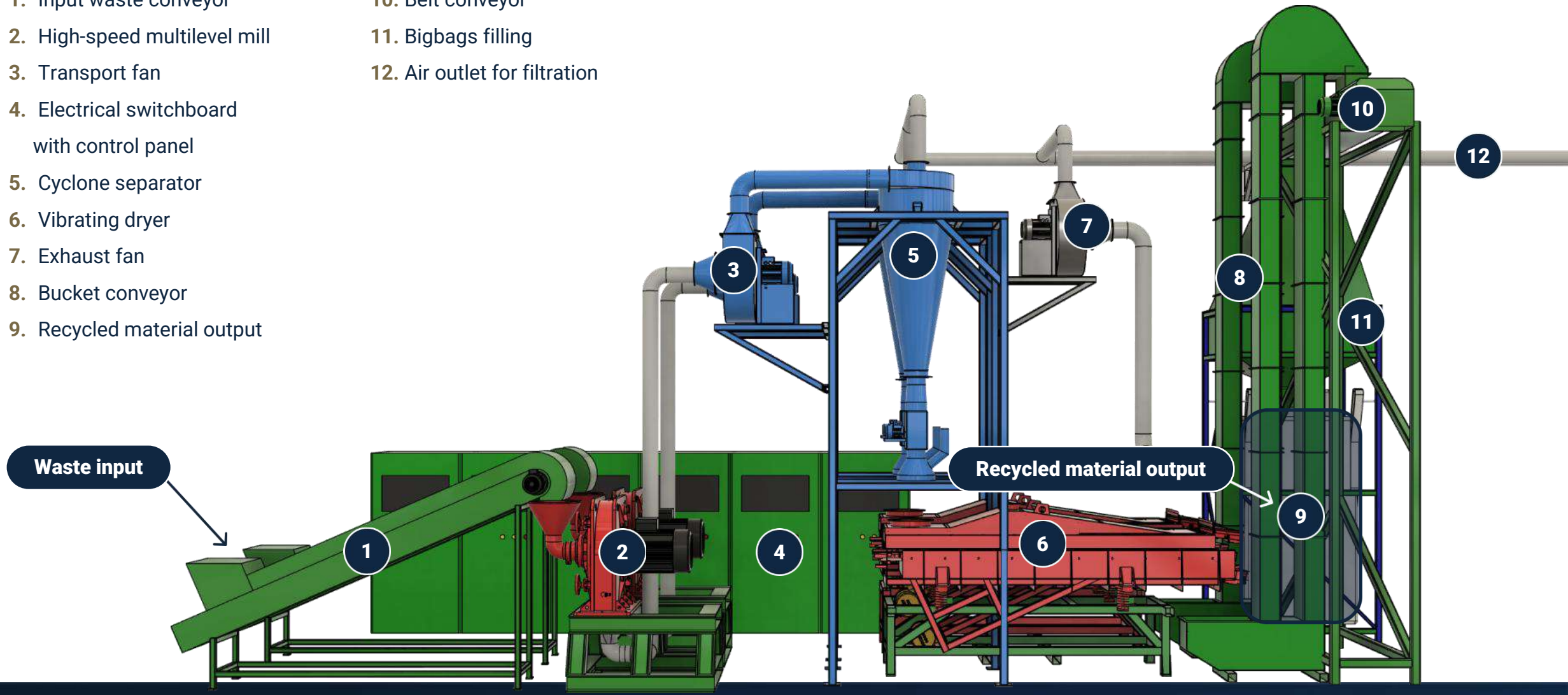
- Waste input size from 20 to 100 mm
- Recycled material output size from 2 to 10 mm
- Models SGD200, SGD300, SGD400, SGD550, SGD1000

Stationary Recycling Line for Hard Materials

- Waste input size from 5 to 20 mm
- Recycled material output size from 50 to 300 microns
- Models SBD200, SBD300, SBD400, SBD550, SBD1000

Stationary Recycling Line for Soft Materials - waste processing

1. Input waste conveyor
2. High-speed multilevel mill
3. Transport fan
4. Electrical switchboard with control panel
5. Cyclone separator
6. Vibrating dryer
7. Exhaust fan
8. Bucket conveyor
9. Recycled material output
10. Belt conveyor
11. Bigbags filling
12. Air outlet for filtration



Stationary Recycling Line for Soft Materials - air filtration

12. Air inlet for filtration
13. Washing solution preparation
14. Washing solution storage tank
15. Air scrubber
16. Air scrubber
17. Exhaust fan

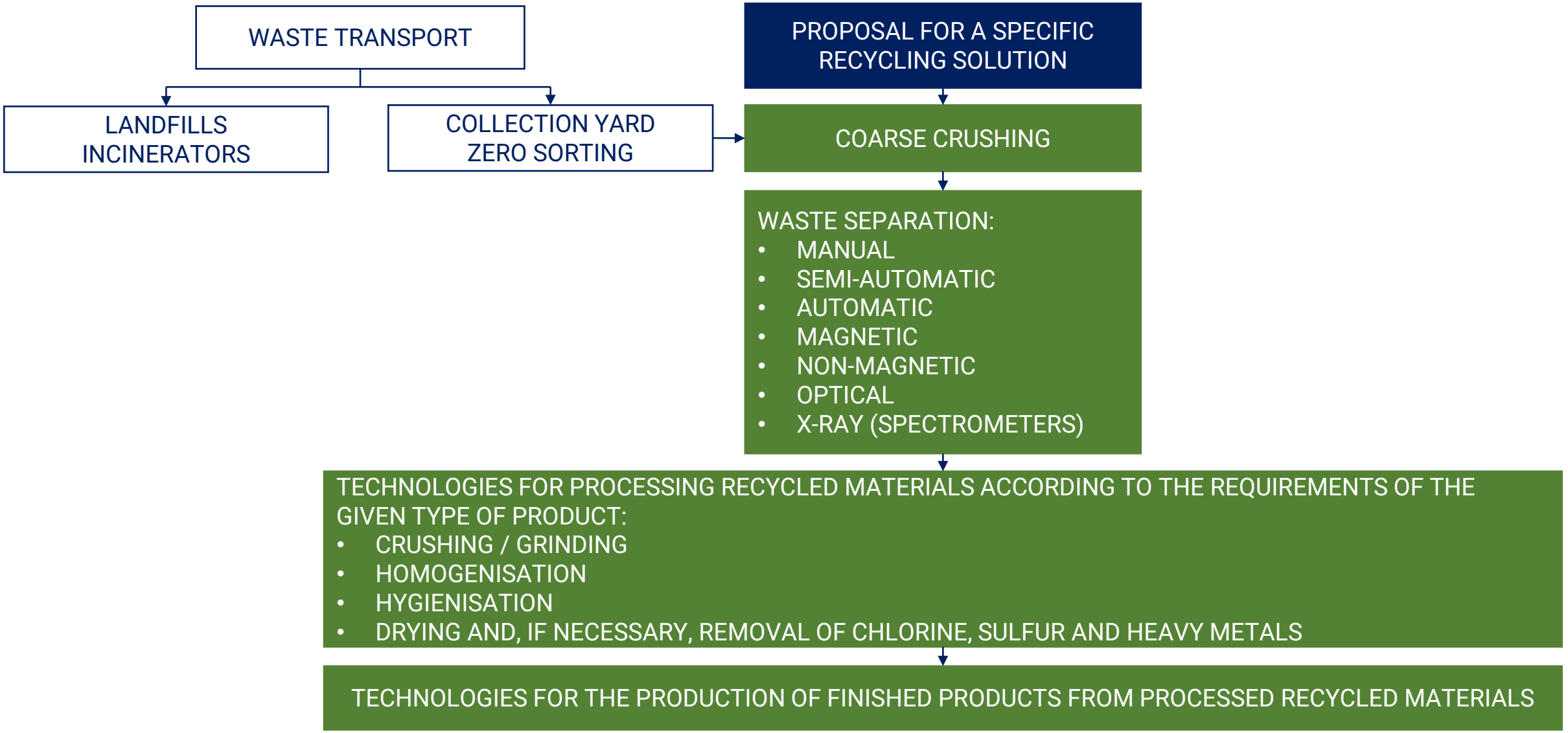
Parameters of the Stationary Recycling Line for Soft Materials

Parameter	SGD200	SGD300	SGD400	SGD550	SGD1000
Dimension LxWxH (**m**)	3 x 4 x 4.5	4 x 4 x 4.5	4 x 6 x 6	4.5 x 6 x 6	10 x 10 x 7
Total weight (**kg**)	3 400	4 100	5 800	6 700	11 200
Installed power (**kW**)	36	45	45	53	105
Rated RPM	12 000	12 000	10 000	8 500	3 600
Mill rotor diameter (**mm**)	200	300	400	550	1 000
Number of operators	1	1	1	1	2
Capacity rubber (**kg/h**)	150	250	300	400	Not suitable
Capacity plastic (**kg/h**)	200	250	350	400	1 000
Capacity textil (**kg/h**)	300	400	500	650	1 000
Capacity biomass (**kg/h**)	300	400	450	600	1 000

Parameters of the Stationary Recycling Line for Hard Materials

Parameter	SBD200	SBD300	SBD400	SBD550	SBD1000
Dimension LxWxH (**m**)	3 x 4 x 4.5	4 x 4 x 4.5	4 x 6 x 6	4.5 x 6 x 6	10 x 10 x 7
Total weight (**kg**)	2 750	3 700	4 500	5 900	10 600
Installed power (**kW**)	23	30	40	43	91
Rated RPM	12 000	12 000	10 000	8 500	6 000
Mill rotor diameter (**mm**)	200	300	400	550	1 000
Number of operators	1	1	1	1	2
Capacity glass (**kg/h**)	350	600	1 100	1 800	5 500
Capacity construction and demolition waste (**kg/h**)	350	600	1 100	1 800	5 000
Capacity fly ash (**kg/h**)	500	800	1 500	2 000	6 500
Capacity cinder, crushed slag (**kg/h**)	350	600	1 100	1 800	5 000

Recycling diagram from input waste to output product



Biomass recycling products

Waste suitable for processing

- Sawdust, wood chips, straw, hay, roots and leaves, green waste from parks and gardens, pits, kernels
- Straw and chaff from cereals
- Paper and cellulose waste
- Sludge from crop processing (pressing sludge, rapeseed sludge, sugar beet sludge, distillery sludge, etc.)
- Sludge from wastewater treatment plants
- Waste from mining

Recyclate

- Recycled biomass: wood chips, sawdust, wood dust

Final products

- Pressed chipboard
- Disposable products for catering
- Wood dust for 3D printing
- Fuel briquettes
- Fuel pellets
- Activated carbon (e.g. water filtration, oil purification, air filtration)
- Organic fertilizers
- Active water-retaining pellets or briquettes

Fuel pellets

Chipboard

Fuel briquettes

Biomass recycling

Rubber waste recycling products

Waste suitable for processing

- Rubber waste
- SBR – tires
- NR – natural rubber products
- EPDM – seals, hoses, etc.

Recyclate

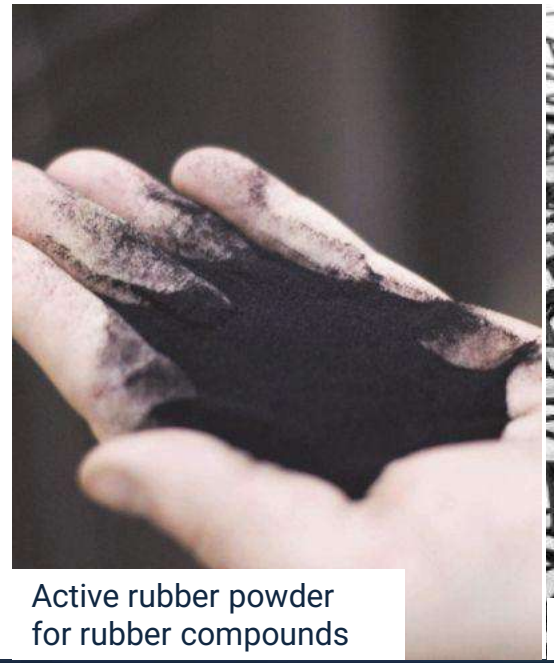
- Recycled rubber waste

Final products

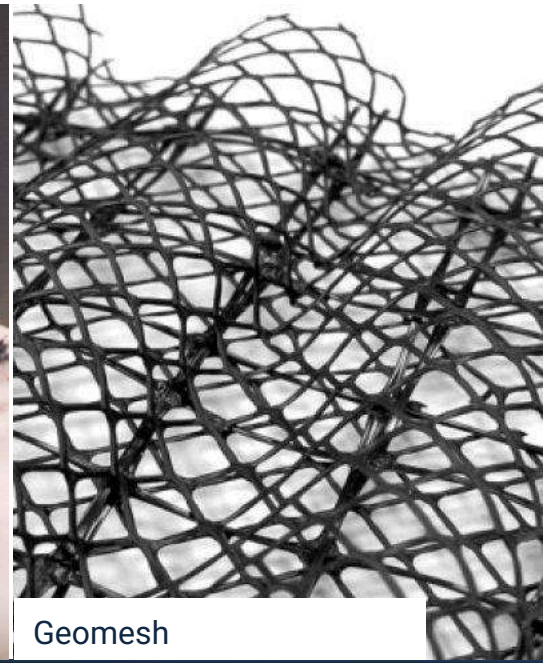
- Filler for asphalt concrete
- Active rubber dust for rubber compounds
- Molding of products such as paving for sports facilities, curbs, noise barriers, geogrids, and geonets
- Production of thermoplastic – TPE
- Production of noise barrier components

Tires

Paving for sports facilities



Active rubber powder for rubber compounds



Geomesh

Insulation and textiles recycling products

Waste suitable for processing

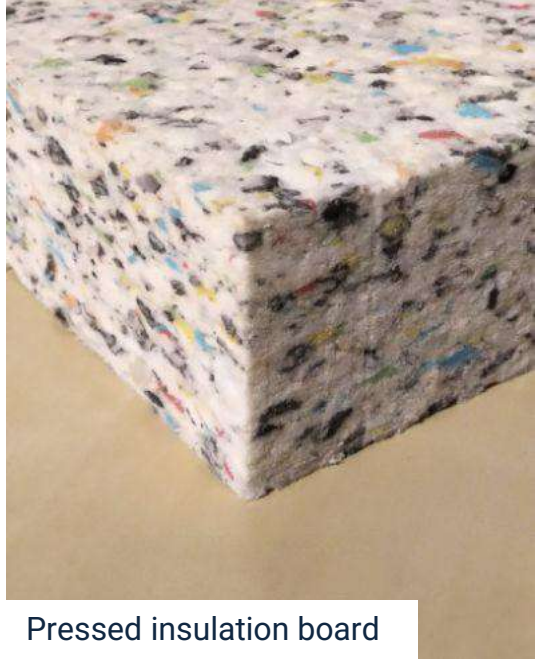
- Waste mineral insulation
- Waste polyurethane (from car seats, mattresses, insulation panels, etc.)
- Industrial waste textiles
- Waste polystyrene (including contaminated)
- Automotive textiles (carpets, upholstery, insulation fillings, car covers)

Recyclate

- Recycled insulation
- Recycled textile shredded material
- Recycled PUR / PIR shredded material

Final products

- Pressed insulation boards and panels
- Insulating plasters
- Lightweight concrete
- Pressed profiles
- Blown insulation
- Non-woven fabric
- PUR plasters
- Energy fuel pellets



Pressed insulation board

Extruded profile

Blown insulation

Plastic waste and RDF recycling products

Waste suitable for processing

- RDF
- Plastic waste
- Composite waste

Recyclate

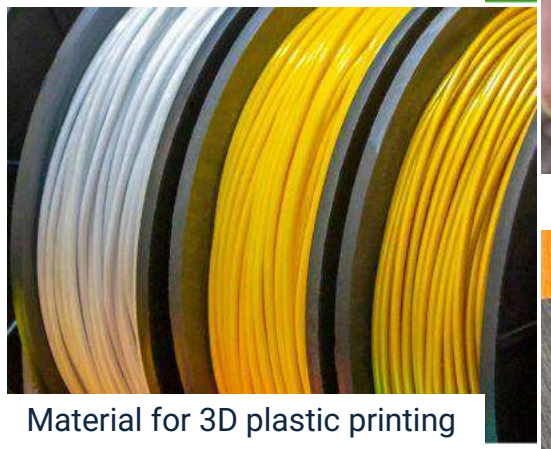
- Recycled material from RDF
- Recycled material from plastic waste

Final products

- Recyclates for mixing into concrete
- Vibro-pressed plastic concrete products
- Pressed boards, panels, and profiles
- 3D printing
- Extruded boards, profiles, paving, and others

Active plastic dust

RDF - Fuel



Material for 3D plastic printing

Plastic concrete products

RDF pressed board

Single-type plastic waste recycling products

Waste suitable for processing

- PP – car bumpers
- PE – food and cosmetics packaging
- HDPE – cables, jerry cans
- LDPE – packaging, plastic film
- PS – insulation, yogurt pots, packaging
- PET – packaging, including cosmetics packaging
- PVC – cables, floor coverings, sewer pipes, windows

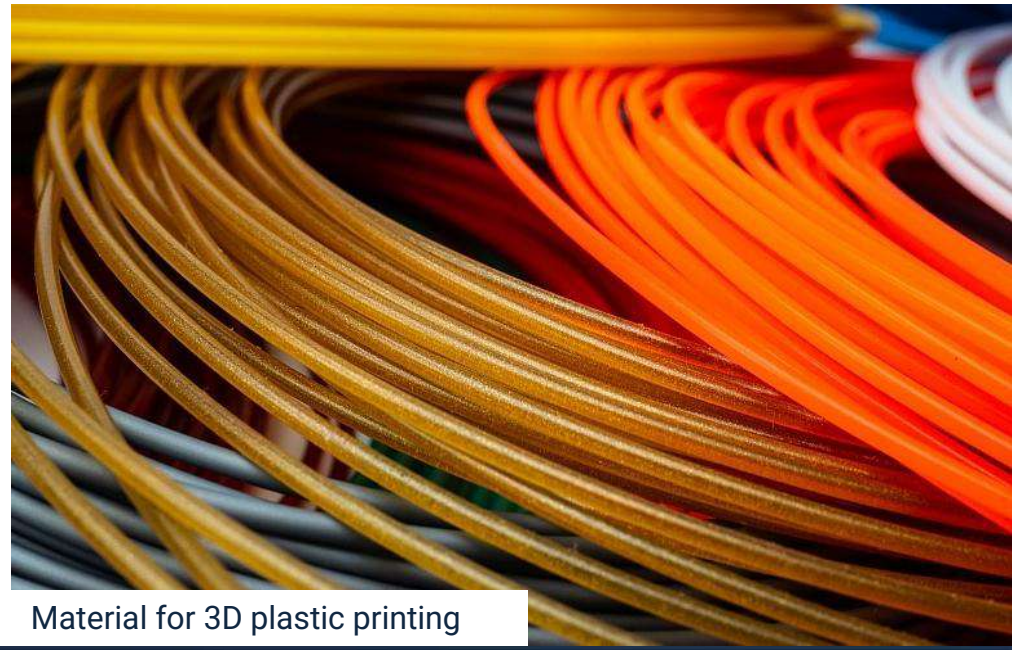
Recyclate

- Granules
- Plastic powder

Final products

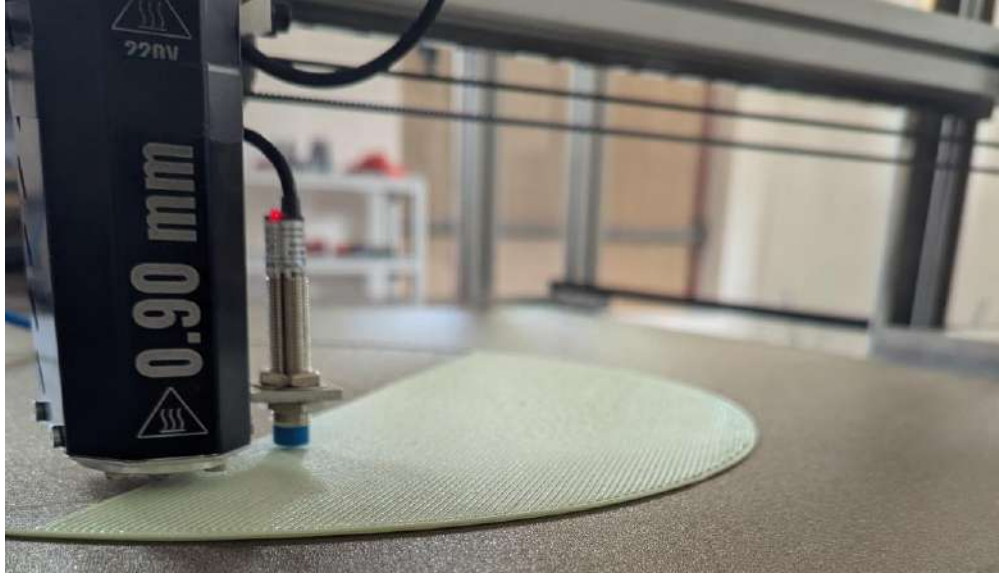
- Material for 3D printing
- Manufacture of plastic products by pressing, injection molding, and rotational molding
- Polymer for modified asphalt

Plastic granules



Material for 3D plastic printing

Recycling products
processed for use in 3D printing



3D printing

Waste suitable for processing

- Plastic in its various forms, e.g. PLA, ABS, PET

Recyclate

- Plastic granules, mainly PET and PETG, and possibly PP or PLA

Final products

- Customised products that offer solutions tailored to the individual needs of each customer

3D printing products

Recycling products
molded plastic boards

Waste suitable for processing

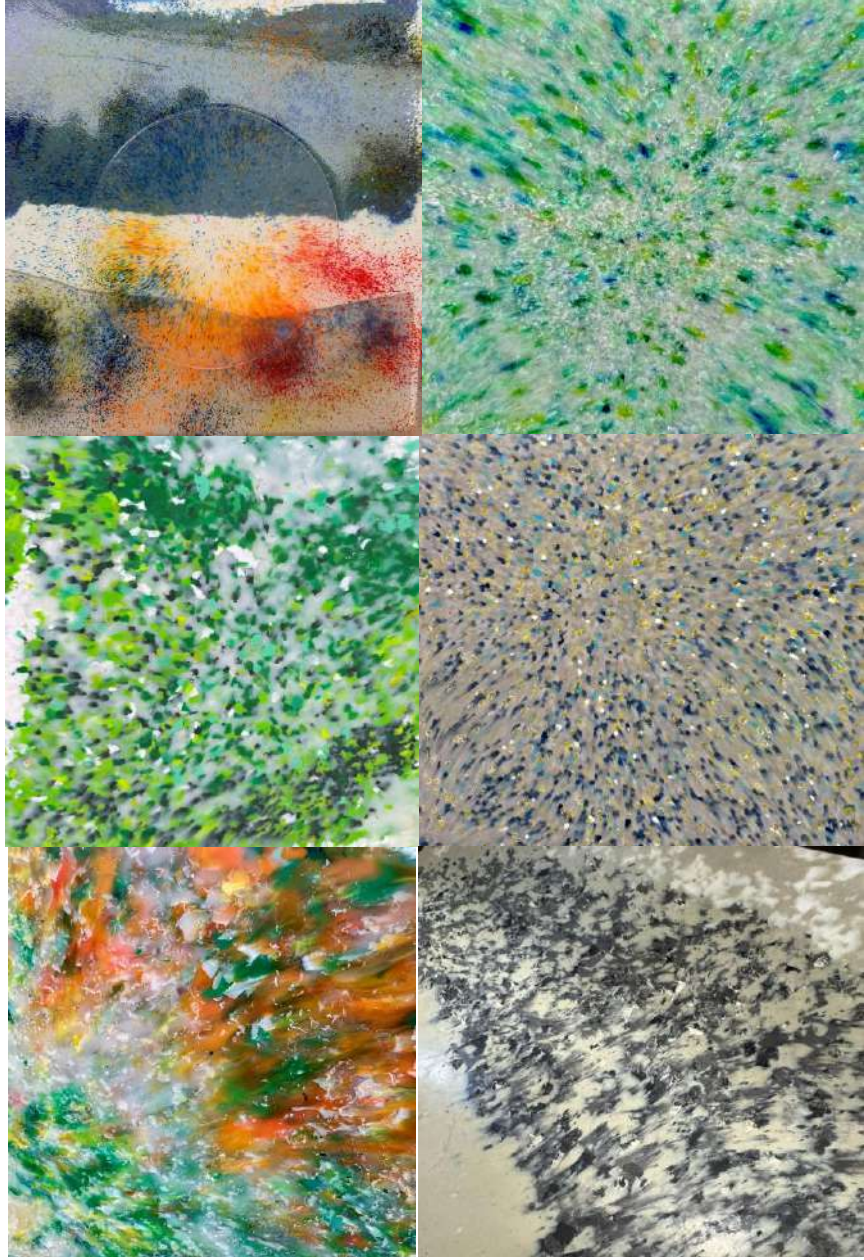
- Plastic in its various forms

Recyclate

- Plastic granules

Final products

- Custom-made products that create unique surfaces and structures, used in interior design, architecture, and artistic creation



Molded plastic boards

Battery packaging recycling products

The lithium battery recycling process

The process of crushing car batteries

Waste suitable for processing

- Car battery packaging
- Lithium batteries

Recyclate

- Recycled material from car batteries
- Plastic scrap
- Metal scrap – Fe, Al, Cu
- Black matter LiFePO

Final products

- Plastic products
- Lithium for batteries
- Metal production

Non-ferrous metals recycling products

Metal scrap

3D metal printing

Waste suitable for processing

- Non-ferrous metals

Recyclate

- Metal chips
- Micronized metals

Final products

- Metal production
- 3D printing

Glass and photovoltaic panels recycling products

Waste suitable for processing

- Flat and container glass
- Photovoltaic panels

Recyclate

- Glass cullet and micro-ground dust
- Extruded aluminum
- Plastic cullet
- Electrical waste
- Composite cullet containing silver

Final products

- Glass production
- Cement replacement in concrete
- Aluminum production
- Fuel pellets
- Silver leaching
- Lightweight concrete
- Foam glass

Glass grit

Foam glass

Construction and demolition waste recycling products

Waste suitable for processing

- SDO, plasterboard – SDK, materials made from gypsum, e.g. molds
- Ceramics, tiles, bricks
- Concrete, aerated concrete
- Roofing materials – tiles

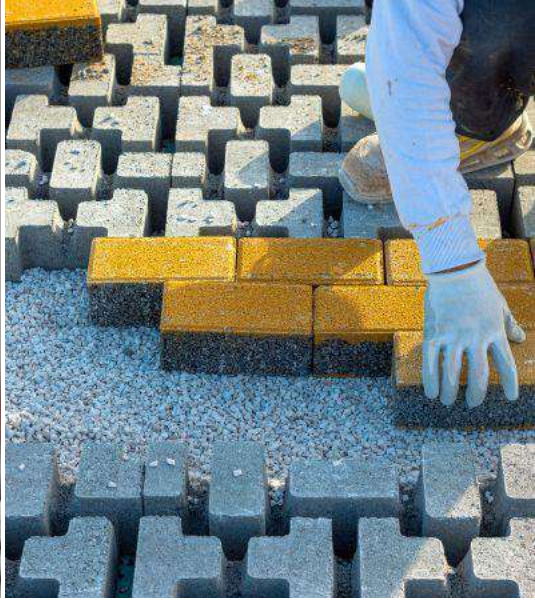
Recyclate

- Recycled construction waste
- Active concrete dust
- Active filler for construction (cement and concrete) mixtures
- Sand substitute
- Gypsum-based aggregate up to 5 mm

Final products

- Cement replacement in concrete
- Active filler for dry building mixtures
- Active filler for asphalt
- Production of building products with improved properties
- Gypsum for cement production
- Recycled material for gypsum production for plasterboard
- Gypsum products with improved properties
- Active filler for plastics
- Active filler for the production of gypsum mixtures in construction - dry plasters, poured floors and others

3D concrete printing



Colored interlocking paving stones

Gypsum recyclate

Plaster mixture

Slag and fly ash recycling products

Waste suitable for processing

- Ash from coal and waste incineration
- Metallurgical slag
- Slag
- Fly ash

Recyclate

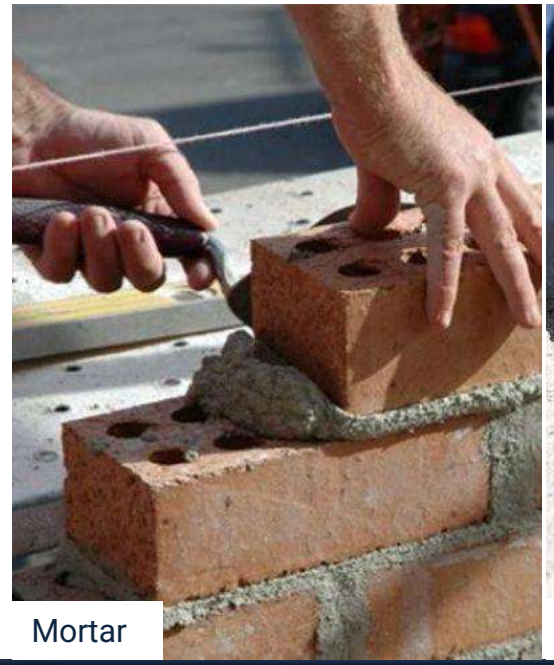
- Recycled slag and fly ash
- Micronised dust

Final products

- Partial replacement of cement in concrete
- Self-leveling floor compounds
- Active filler for dry building mixtures
- Active filler for asphalt concrete
- Production of building products with improved properties


Glue


Self-leveling compounds


Mortar


Active filler for asphalt

We use renewable energy – greenPOWER from SSE

We have obtained the **greenPOWER certificate from Stredoslovenská energetika, a. s.** for **2026 and 2027**, which confirms that **all the electricity used in our production comes exclusively from renewable sources**. This step is part of our commitment to **environmental and social responsibility**.

The greenPOWER certificate supports projects focused on **sustainable energy production** from renewable sources such as **hydro, wind, solar, and geothermal energy, biomass, and biogas.**

This certificate is a commitment for us to continue supporting **green solutions** and to ensure that our production is as sustainable and environmentally friendly as possible.

SSE
STREDOSLOVENSKÁ ENERGETIKA

2026

greenPOWER certificate

Awarded to:

Enviro Lieskovec, a. s.
Lieskovská cesta 245, 962 21 Lieskovec
IČO: 31405061

greenPOWER is a Stredoslovenská energetika, a. s. certificate that confirms that the total volume of electricity delivered in this period is entirely produced from renewable energy generation, and thus supports projects aimed at social and environmental responsibility.

Period:

1. 1. 2026 – 31. 12. 2027

Stredoslovenská energetika, a. s. is a modern energy supplier that is aware of its environmental responsibility. It is therefore our long-term objective to support energy efficiency, the rational use of electricity, and increasing the generation of electricity from renewable sources (water, wind, solar, geothermal, biomass, biogas, etc.).

Žilina, 5.12.2026

Ing. Patrik Vicenec
Director of section
Sales to B2B customers

As an environmentally responsible company we use 100 % recycled paper.

tel.: +421 41 519 11 11 | sse@sse.sk | www.sse.sk | Stredoslovenská energetika, a. s. Pri Rajčianke 8591/4B, 010 47 Žilina

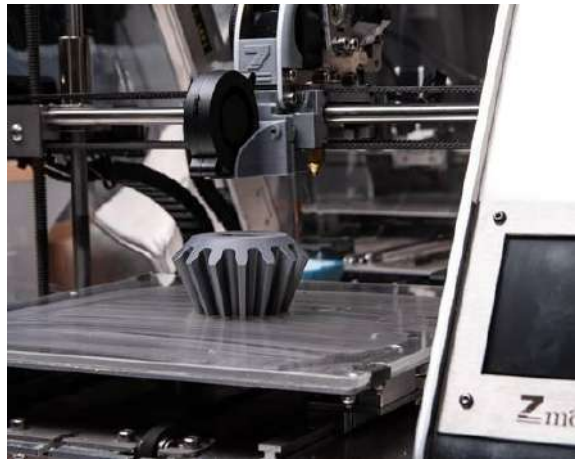
Id. No.: 31 865 467, VAT No.: SK2120814575, Tax ID: 2120814575, IBAN: SK91 0200 0000 0000 0070 2432, BIC: SUBASKBX, Stredoslovenská energetika, a. s. is registered in the Business Register of the District Court Žilina, Section: Sa, Insert No.: 10328/L
www.sse.sk

What the future holds

Pre zelenú planétu a budúce generácie

Cooperation with universities, research institutions and manufacturers

This collaboration brings innovative solutions and access to the latest technologies. It allows us to combine academic know-how with practical experience.



Special waste sorting with preparation for 3D printing

We are developing new methods of waste sorting with pre-processing for 3D printing. We can create useful products from recycled materials, even from composites or less pure plastics. We use optical technologies and AI for sorting.

Development of composite material formulations from waste and materials for 3D printing

Preparation of clean recyclables for 3D printing, namely:

- construction products,
- plastic products,
- non-ferrous metal products.

Thank you for your attention

Contact:

Ing. Ján Badžgoň, PhD.

CEO

Castor & Pollux, s.r.o.

Email: badzgon@castorpollux.sk

Phone: +421 2 593 11 726

Ing. Ľubomír Švantner

Chairman of the Board

Enviro Lieskovec, a.s.

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Castor & Pollux

www.castorpollux.sk

2025