



PRECAST FLOOR PRODUCTION
SEMI - PRO - EDGE



WHAT IS PRECAST?

A smart and safe way to build consistent high quality

Precast is a smart, industrialized way to build high-quality buildings of any type safely and affordably. Factory-made precast ensures fast construction times, high profitability and consistently high quality.

Great freedom and flexibility

Precast is suitable for all types of building, whether residential, industrial or public. It can be used in seismic areas and is particularly well suited to areas where hurricanes are common. Precast can be used as the only building material or it can be utilized as a composite structure only. With pre-stressed slabs, the span in residential buildings can be 6 to 12 meters and only exterior walls need to be load-bearing. This gives great architectural freedom and allows the use of large, open, connected spaces, or whatever is best for the building's end-users.

Beautiful and sustainable

Selected raw materials are used for precast as part of a carefully designed production process. It is also an energy-saving and raw-material-efficient building method. Compared to cast-in-situ, precast uses less of everything – less cement, less water and less steel – and produces less waste on-site and in the factory. Precast also incorporates good insulation and thermal properties and has lower lifetime costs than any other building solution. Nevertheless, requirements for beautiful buildings and pleasant, modern neighborhoods are not compromised. Facades can be made in almost any size, shape, form, and finish. If the façade needs to include a reproduction of a famous artwork, it can. If a brick wall finish is preferred, this is also possible.

OUR PROMISE. PROFITABLE PRECAST.

Elematic is a world leader in precast floor production technologies with 230 currently valid patents and largest annual R&D investment in the industry. That's why we can offer you large, smoothly-running factories or efficient solutions for small-scale production, whichever suits best to your needs, and safe and user-friendly machines and technologies that generate true added value for your floor manufacturing.

Our production technology covers precast floors from hollow-core slabs to ribbed and half slabs.

To help you choose the equipment you need, we have created three production line packages: *SEMI*, *PRO* and *EDGE*. They offer different levels of production capacity, automation features and choices of end product range and vary in the number of required operators. All these can be tailored to best meet your needs.

In our opinion, profitable precast is based on three cornerstones, and this is what we deliver every time.

Lowest operational costs

Elematic production lines are optimized to supply the lowest operational costs in the precast business. The individual machines are designed to be raw-material

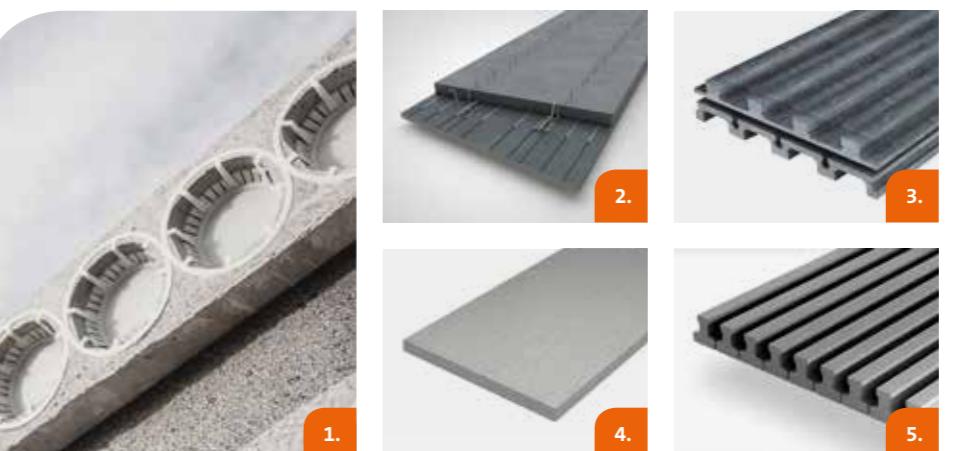
efficient, fast, easy-to-use and durable, and to work together in perfect concert. When you begin building your factory, our project office and installation services guarantee that your production will start as scheduled.

Best end products

We want you to be proud of the products you supply to your customers. This is why we use shear compaction in our extruders as it guarantees the best possible compaction result. We also manufacture our beds to tight tolerances, with corrosion-resistant design and completely even surfaces, ensuring accurate measurements of precast products.

Lifetime commitment

We stand by you at every step of your precast business and help you to find the smartest match to your needs from the initial definition of precast investment to precast production renewal. Our experienced experts guide you from building, investment and production planning to factory, line and machinery maintenance, optimization and renewal. We have skilled specialists at our technical support unit ready to help you with any challenges you may have. High-quality spare and wear parts, retrofit kits and upgrades are also available to improve your production process.



END PRODUCTS

1. Hollow-core slabs
2. Half slabs
3. Ribbed slabs
4. Solid slabs
5. T-beams



SEMI

If you are planning to start production in the range of **35,000–150,000 m²** and need a production line that does not require a high initial investment, SEMI Floor is a smart choice.

SEMI Floor features straightforward and easy-to-learn basic technology and, as with all Elematic production lines, it is designed to supply the lowest possible operational costs and the best end products. The line can be, and almost always is, custom-made to suit the particular needs of your specific factory.

BENEFITS AT A GLANCE

Low initial investment

- Reliable basic technology
- Single-operator combined machine for sawing, cleaning and strandpulling
- Basics of installation can be done without experts

Low operational costs

- Low energy consumption as bed needs no heating of extra concrete
- Low cement consumption thanks to efficient shear compaction
- Fewer machines and lifts required thanks to one combined sawpreparer
- Long-lasting components and materials

Best end products

- Straight and even elements thanks to the rigid bed steel structure manufactured to tight tolerances and the high-quality bed surface
- Excellent concrete compaction ensures consistently high quality

IN FIGURES

Theoretical capacity **144–576 m²/day**
(one casting)

Personnel 9

Production area 3000 m²

Land area 4500 m²

No. of beds 1–4

Max. slab heights 320 mm

(All figures are estimates)

KEY EQUIPMENT ON THE LINE:

Extruder S5

Cost-efficient, fast and high-quality shear compaction with low maintenance requirements and simple operation. Modular structure, easy-to-change nozzle modules for different product types.



Sawpreparer S5

A smart combination of sawing, cleaning and strandpulling. No need for two or three separate machines or operators. Halves the number of lifts required.



Bed S5

Rigid steel structure manufactured to tight tolerances. Unique long-lasting steel surface. Corrosion-resistant. Easy to install, needs no concrete filling*.

*Integrated heating system for fast curing and solid bonding also available.

PROCESS

- 1 Batching and mixing, mobile
- 2 Concrete transportation, Crane + Skip
- 3 Prestressing, single stressing device
- 4 Casting, extruder or slipformer
- 5 Curing
- 6 Cutting, cleaning, strandpulling; sawpreparer
- 7 Oiling manually
- 8 Lifting and transferring slabs; Mobile crane, trailer



PRO

If you need to produce different types and large volumes of precast products in the range of **100,000–350,000 m²**, the PRO production line and equipment are an ideal choice. All the PRO key functions – concrete transportation, casting and cutting – are automated. The line is designed to supply the lowest possible operational costs and the best end products. The line can be, and almost always is, custom-made to suit the particular needs of your specific factory.



KEY EQUIPMENT ON THE LINE:

Extruder E9

Advanced shear compaction technology saves concrete and cement. High compaction efficiency and long component lifetime. Unique compaction control and smart strand guide for consistently high-quality results.

Shuttle E9

Fast and automatic concrete transportation.

BED E9

Unique long-lasting steel surface that stays straight and even. Rigid steel structure manufactured to tight tolerances. Integrated heating system for fast curing and solid bonding. Easy to install.

Preparer P7

High-powered one-man bed preparer with cleaning, oiling and pulling strands. Excellent cleaning results for totally even end-product surfaces.

Saw P7

Rapid automated cutting. Manual positioning.



BENEFITS AT A GLANCE

Lowest operational costs

Shear compaction keeps cement consumption and production costs exceptionally low. Entirely automated concrete transportation and bed preparation with one machine and one operator supply significant savings in time and money.

Best end products

Extruder's high compaction efficiency gives consistently high product quality. High-precision beds feature long-lasting steel surfaces and an integrated heating system to speed up curing which promotes solid bonding between concrete and prestressing strands, even in warm climate conditions.

Wide product range

Flexible production of hollow-core, half slabs, ribbed slabs and T-beams.



PROCESS

- 0 Waste water treatment plant
- 1 Batching and mixing, mobile
- 2 Concrete transportation, shuttle
- 3 Concrete distribution
- 4 Bed preparation, cleaning, oiling and pulling strands
- 5 Prestressing, single stressing device
- 6 Casting; Extruder or Slipformer
- 7 Curing
- 8 Cutting, multi-angle saw
- 9 Storing with lifting and transferring
- + ELiPLAN precast production management



IN FIGURES

| | |
|----------------------------|--------------------------|
| Theoretical capacity | 1080 m ² /day |
| Personnel | 7 |
| Production area | 4000 m ² |
| Land area | 6500 m ² |
| No. of beds | 6 |
| Max. end slab height | 500 mm |

(All figures are estimates)



BENEFITS AT A GLANCE

High productivity

Fully automated functions throughout the line guarantee fast and smoothly running processes. Efficient shear compaction leads to low cement consumption and low costs.

Best end products

Full automation and laser positioning guarantee exact positioning of openings and accurate sawing, while the high-precision bed guarantees exact measurements and even slabs. Shear compaction guarantees consistent high-quality compaction results.

Low impact on environment

Low-dust cutting, low cement consumption of shear compaction and recycling of concrete from the openings guarantee an environmentally-efficient production process. Low-noise extrusion.

EDGE

Are you looking for very high capacity in the annual range of **150,000–800,000 m²**, a wide product range and highly automated precast production? The EDGE production lines and machines are just the answer to your needs.

The EDGE technology level guarantees smart precast production with maximum output and return on investment as well as low operational costs and best end products. The EDGE line features a high automation level with fully automatic casting, creation of openings, water holes, sawing and concrete transportation.

The EDGE line's automation solution can be integrated into compatible CAD or BIM software to support the entire workflow from building design to erection on the construction site. Project and product data can be automatically synchronized with factory production planning systems. Product manufacturing and delivery schedules can be followed on the construction site using an intuitive 3D view of the building.

KEY EQUIPMENT ON THE LINE:

Extruder E9

Saves concrete and cement. High compaction efficiency and long component lifetime. Unique compaction control and smart strand guide for consistent high-quality results.

Bed E9

Unique long-lasting steel surface that keeps elements straight and even. Rigid steel structure manufactured to tight tolerances. Integrated heating system for fast curing and solid bonding.

Preparer E9

High-powered one-man bed preparer with cleaning, oiling and pulling strands. Excellent cleaning results for totally even end-product surfaces.

Shuttle E9

Fast automatic concrete transportation.

Saw E9

Fast, efficient, fully automated cutting throughout the entire bed length. Low dust and noise.

Modifier E9

Fully-automated, fast and accurate slab markings and openings.

Stresser E9

Stress all strands for one bed simultaneously with one machine.

ELiPLAN E9

Total control of your precast business and production all the way to the construction site.

PROCESS

- 0 Waste water treatment plant
- 1 Batching and mixing
- 2 Concrete transportation, shuttle
- 3 Concrete distribution
- 4 Bed preparation
- 5 Prestressing, bundle stressing device
- 6 Casting; Extruder or Slipformer
- 7 Openings, fully automatic modifier
- 8 Curing, maturity control
- 9 Cutting, fully automatic saw
- 10 Storing, lifting and transferring
- + ELiPLAN precast production management



IN FIGURES

Theoretical capacity 2880 m²/day
(two castings)

Personnel 10

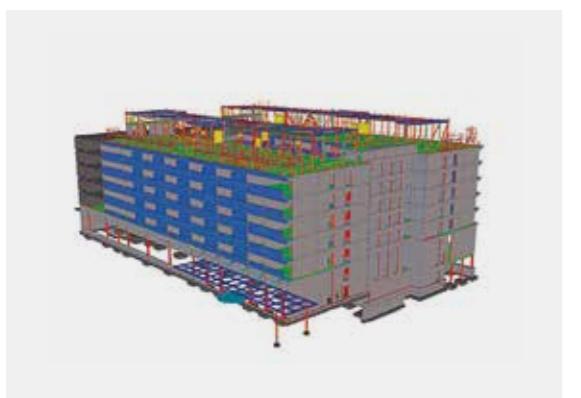
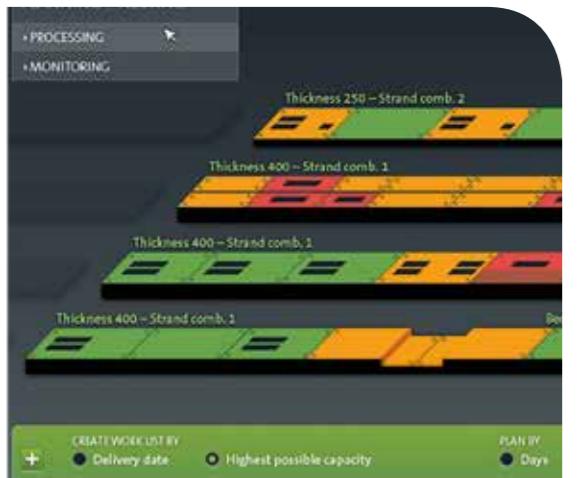
Production area 5000 m²

Land area 9000 m²

No. of beds 8

Max. end slab height 500 mm

(All figures are estimates)



PRODUCTION OPTIMIZATION

Is your production as efficient as it could be? Let us introduce you to the manufacturing execution system for precast floors – a complete solution to optimize hollow-core slab production and ELIPLAN, an enterprise resource planning system specifically designed for precast factories.

MANUFACTURING EXECUTION SYSTEM FOR PRECAST FLOORS

The manufacturing execution system (Floor MES E9) for precast floors offers a complete solution to optimize hollow-core slab production. Developed based on users' needs, the system optimizes the use of production lines and work schedules, while monitoring the work progress.

ELIPLAN

ELIPLAN is an enterprise resource planning solution specifically designed for precast factories. ELIPLAN enables you to optimize the use of factory resources and minimize waste, which can significantly reduce the operating costs of the factory. ELIPLAN can be easily integrated with Tekla Structures BIM to support the entire process, all the way from the design to the construction site.

ELIPLAN provides complete support for planning precast production, from one production line to multiple factories and product types. The solution includes support for sales, material management, production, warehouse management, transportation and machinery maintenance.

WORKING TOGETHER FOR CONCRETE RESULTS

We offer a wide range of services that help to support your precast operation and to provide you with concrete results. Your precast operation is in the best possible hands.

Care

We offer continuing expert care to ensure higher uptime. A comprehensive range of services and technical support are available to you throughout the lifetime of your precast plant: from commissioning and maintenance to upgrades and modernization. Our experienced service experts can help you to resolve any issues you may have using proven industry best practices. Fast support is provided throughout the day by our Helpdesk services in four locations: Finland, the USA, the UAE, and India.

The Elematic E-shop is open 24/7, enabling you to order high-quality spare and wear parts at your convenience. The OEM parts are guaranteed to fit your equipment and provide you with the lowest long-term operational costs.

Grow

Together with Elematic's consultation services, your operation can reach new heights of profitability. We can help you to detect bottlenecks, optimize production, and find the most cost-effective recipes to improve your efficiency and ensure a higher return on your investment.

Create

Our design services work closely with you to help you implement the most successful precast solutions. We are here to help you every step of the way, providing precast expertise for your project from the initial stages of concept design through to structural engineering for precast buildings.



PRECAST FLOORS

SEMI - PRO - EDGE FOR FLOOR PRODUCTION

Elematic provides precast concrete technology, production lines, equipment and related services that help customers succeed. We are the global technology and market leader in precast concrete technology for residential and non-residential buildings.

Our precast production technology is highly respected worldwide for its high quality, excellent productivity and efficiency, and advanced solutions. We believe in continuous improvement of our operations and offering to develop our customers' business in a smart way. That's why we are trusted by 40% of the world's precasters.

www.elematic.com



SMART EVOLUTION