spiroll

PRECAST SOLUTIONS

SPECIALISTS IN PRECAST TECHNOLOGY

www.spiroll.co.uk


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PRECAST CONSTRUCTION

Precast concrete construction is a popular building method because of its speed and efficiency of construction, quality and cost-effectiveness.

It is used to produce structural and architectural elements including frames, foundations, floor slabs, walls, beams, columns and façade panels. Precast construction is widely used throughout the world for many types of buildings, from prestigious commercial or residential projects to industrial plants and mass affordable housing. In developing markets, there is a growing acknowledgement of its value and importance as a fast, reliable and efficient means of construction.

WHY CHOOSE PRECAST?

QUALITY

Precast elements are produced in a factory environment as opposed to being cast on site, providing a high degree of control over the manufacturing process and the quality of the finished product. This high quality can result in reduced maintenance costs over the lifetime of the structure.

EFFICIENCY

The construction process is simplified. Precast elements are designed to suit each project, including custom-built products which can be produced quickly and economically. Finished items are labelled and transported to site where once correctly installed according to the schedule, they are immediately functional. This controlled production environment can also reduce on-site errors.

SPEED OF CONSTRUCTION

Construction is faster with precast. While other work progresses on site precast elements are factory manufactured and shipped to site for installation according to schedule. Further time is saved as voids and embedded items are incorporated during the production process.

COST

In comparison to traditional reinforced concrete, precast prestressed elements require less concrete and reinforcement. By reducing the amount of cement and steel, material costs are cut and the weight of the structure is in turn reduced. On-site and factory labour costs are also lower. In addition, wastage both during manufacture and installation is minimised, delivering sustainability benefits as well as economy.

FLEXIBILITY

Precast offers benefits to architects, designers and clients. The longer spans and thinner slabs that can be achieved promote flexibility, create additional space and encourage more inspirational design.

HYBRID CONSTRUCTION

Precast can be used in conjunction with other techniques in the form of hybrid construction. The CCL group also has expertise in post-tensioned and reinforced concrete construction, gained from projects around the world, and is able to advise on the feasibility of these combinations and their suitability to specific markets and projects.

SPIROLL TURNKEY SOLUTIONS

From existing precast manufacturers to those making their first venture into this sector, to contractors with a need for on-site precast manufacture, Spiroll has a range of options which can be tailored to provide the optimum precast production solution.

The company will guide the client through all relevant stages including design, set-up, training and support, ensuring they have everything required to plan their project. Further down the line, Spiroll can help clients to optimise production according to market conditions or project requirements and provide ongoing support and advice.

Spiroll is a known and respected name throughout the precast concrete industry. Now part of the CCL group, its experience, technical expertise and manufacturing excellence form a major part of CCL's specialised engineered solutions for structures. The CCL group can also assist with design of precast structures.

COMPREHENSIVE PRECAST FACTORY

Spiroll offers a comprehensive precast factory set-up. This includes a full feasibility study which takes into account local market conditions. Information on capital, raw materials, labour requirements and overheads is gathered and presented to allow potential investors to calculate fixed and variable costs and understand the projected payback on their investment.

START-UP PRECAST

For investment in precast on a smaller scale, an economical start-up plant offers an alternative means of entry. Spiroll can advise and support clients wishing to establish a start-up facility which requires a smaller capital investment. This model is based on staged investment with progressive development and growth funded by sales.

ON-SITE MANUFACTURING

Where the remoteness of a construction site makes access to precast elements problematic and for large projects, plants can be designed and built to precast on site. Benefits include savings on transport costs, control over supply and flexibility once the project is complete.

SPIROLL DELIVERY

Spiroll offers a comprehensive precast set-up package which includes every aspect of the start-up process including:

- Appraisal
- Consultancy/Design
- Specification
- Production
- Installation
- Commissioning
- Training
- Maintenance
- Project Management
- Spare Parts
- Ongoing Support

EQUIPMENT AND SERVICES

EXTRUDERS

The extensive range of Spiroll Slab machinery includes the high performance Vortex extruder which minimises downtime by enabling a 10-minute product change, and the Universal extruder which has a proven track record gained over many years in locations around the world.

The Spiroll system uses an extremely dry concrete mix and less cement than other machines. The intense high frequency vibrations and pressure within the machine 'plasticise' the concrete mix allowing it to be moulded and formed into the required section.

CASTING BEDS

Good quality, dimensionally accurate and correctly installed beds ensure efficient continuous production and help improve the finished slab soffit quality. Spiroll will advise on the most suitable casting bed length taking into account available space and production capacity.

LIFTING SYSTEMS

SlabLock clamps are suitable for lifting Spiroll Slabs from production beds, moving them in the stock yard, and fixing on the construction site. They can be customised to fit a wide range of different Spiroll Slab profiles. A unique locking device locks the jaws into any position to promote safety on site during handling.

PRECAST CONCRETE MOULDS

Moulds for a range of plain, reinforced and prestressed concrete elements are available and are tailored to meet individual customer requirements. Each mould is carefully designed, manufactured and tested to ensure reliable and consistent production capability.

SAWS

Saws include the multi-angle, the crosscut and the longcut saws designed to cut slabs directly on the production beds. A yard saw provides a secondary cutting station outside of the main production facility.

PRESTRESSING SYSTEMS

Prestressing equipment includes a full range of CCL pumps, jacks, grips and accessories. Bespoke stressing solutions are designed and built for new and existing precast factories producing any type of prestressed concrete product and include custom built multi-stressing systems and hydraulic detensioning rigs.

TRAINING AND SUPPORT

Spiroll places great importance on training staff involved in the precast operation to promote safe working practices and manufacturing efficiencies.

At all stages of the precast process Spiroll can provide support and assistance to ensure precasters maximise their manufacturing potential. From initial consultation, through set-up, training, production optimisation, plant maintenance and renewal, Spiroll can help clients get the most out of their investment.

PRECAST DESIGN CONSULTANCY

To ensure that a structure meets the required nationally and internationally recognised codes and standards, Spiroll has teams of highly qualified and experienced engineers who can provide a range of design consultancy services.

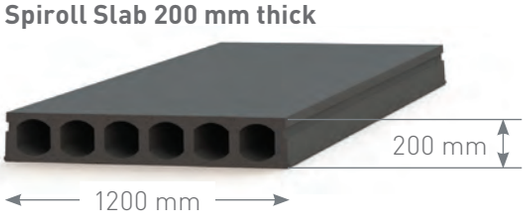
Precast elements including columns, walls, beams and slabs can be designed in various shapes and sizes. Spiroll will address the criteria set for each project and provide an optimal solution focused on aspects such as:

- Aesthetics: shape, finish, concrete colouring
- Design: span length, self-weight, concrete sections, loading, strength, connections
- Construction: project schedule, access, lifting equipment
- Sustainability and adaptability: optimised construction material, durability, future flexibility
- Economics: plant-controlled construction, cost, maintenance reduction

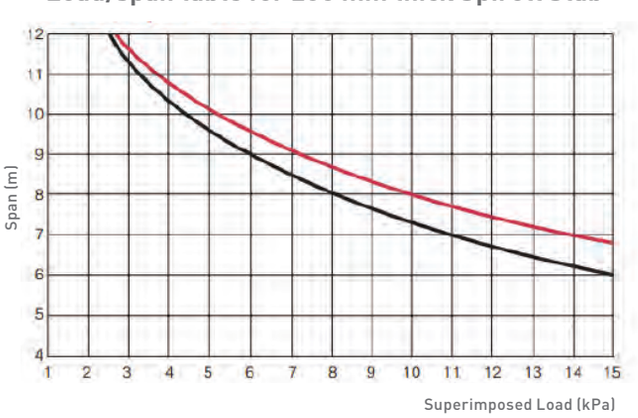
Spiroll can work with the project team on all types of concrete elements whether structural or non-structural, solid sections or voided sections.

Lightweight voided concrete sections known as Spiroll Slabs are commonly used in building applications. They can be designed to meet the span-load requirements while providing extremely efficient sections with concrete material and weight savings reaching up to 45%.

Spiroll Slab 200 mm thick



Load/span table for 200 mm thick Spiroll Slab



Load/span tables shown are for information only. Actual load/span capabilities will depend on local codes, standards and materials.

50 Composite Topping
Untopped

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