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PRECAST

Precast concrete construction offers many potential advantages over onsite casting. Precast concrete production can be performed on ground level, which helps with safety throughout a project. There is greater control over material quality and workmanship in a precast construction compared to a cast-in-situ construction. Precast concrete structures also provide superior resistance to fires, natural disasters, insects and mold. The gradual shifting of building contractors and customers towards eco-friendly and cost-effective modern building designs are fueling the demand for precast concrete construction.

The major factors that are driving the growth of the Precast Concrete Market are rapid urbanization and increasing investment in new construction projects. In addition, the need for reduction in construction time and cost. In this edition of eMagazine we have advantages of precast construction, precast building system, precast wall and materials used in precast construction.

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Precast concrete - elements, advantages, applications and potential

Precast concrete is a construction product produced by casting concrete in a reusable mold or "form" which is then cured in a controlled environment, transported to the construction site and lifted into place. It is an alternative to cast-in-situ concrete. While cast-in-situ concrete is cast in its actual location, precast concrete is cast at another location, either at the building site or in a factory, and is then lifted to its final resting place and fixed securely. This means that unlike cast-in-situ construction, which is monolithic or continuous, precast concrete buildings are made of separate pieces that are bolted or connected together.

Precasting is great for producing large numbers of identical components. Let's say we are building an affordable housing project with 3,000 identical apartments. We could then use precasting to produce wall slabs and floor slabs for all the apartments, and then lift them into place and connect them. Using a precast concrete system offers many potential advantages over onsite casting. Precast concrete production can be performed on ground level, which helps with safety throughout a project. There is greater control over material quality and workmanship in a precast plant compared to a construction site. The forms used in a precast plant can be reused hundreds to thousands of times before they have to be replaced, often making it cheaper than onsite casting when looking at the cost per unit of formwork.

Elements of precast concrete

A precast building is constructed by assembling and connecting various prefabricated elements required in the

building structure. These elements are:

Footings

Precast footings are foundations that are easy to install and use as soon as they arrive on site. They are extremely strong and provide a stable and level base from which to build.

Beams

Precast concrete beams are an integral feature of many buildings today. They are particularly suited to floor construction in houses, flats and commercial buildings and provide a low-cost flooring solution. Edge and spandrel beams which have a sill, go around the edge of the construction adding strength and with the sill providing the base from which floor slating can start. Spine beams are like spandrel beams but have two sills. Suspended beam and block floor systems utilising precast concrete minimise excavation requirements.

Columns

With both strength and flexibility, precast concrete columns add strength and flexibility and increase the life of any building. Columns can be made to the architect's design and incorporate any special features or fittings. These columns can be erected as much as five times faster than in-situ methods of concrete production, so are labour saving.

Shear Walls

Precast concrete wall panels can be used for both exterior and interior surfaces. They provide strength and lateral stability and when assembled can form a shear wall. Using walls panels and building them up is the most common method used and enables lateral-force resistance to be determined. They have been used in building projects as high as 30 stories but are more commonly seen in lower level constructions.

Partition Walls

Partition walls made from precast concrete can be lifted into position or the panels cemented together on site to provide a wall to ceiling partition wall solution. This type of assembly can be as much as six times quicker than alternative brick work. Panels are particularly suited to sound insulation, so are suitable for use in hotels, kitchens, hospitals, schools and apartments.

In pretension, the prestressing steel is tensioned initially between rigid abutments, often covering a number of precast elements located in between the two abutments. Then formwork is fixed in position in between the two abutments around the tensioned wire for the various elements. Secondary reinforcement and other items to be embedded in the concrete member are then placed in position and concrete is thereafter placed into the formwork. After the concrete has achieved the required strength and bond between the prestressing steel and concrete has developed, the long pretensioned steel is cut between the various precast elements and the prestressing force is transferred from steel to the concrete through bond. In post tensioning is adopted, the prestressing steel elements are enclosed within a conduit or sheathing or duct or greased sleeve with the assembly being referred to as 'tendon'. This tendon is typically tied to a cage or mat of reinforcement, placed within the formwork. Mechanical anchorage elements are placed at each of the two

ends of the tendon and secured to the formwork.

Under certain circumstances a combination of pretensioning and post tensioning may be used. This approach may be used where the self-stressing forms or tensioning abutments cannot sustain the full required design prestressing force for prestensioning. In such a case, the majority of the force is applied through post tensioned steel and post tensioned tendons are used later to introduce the remainder of the design prestressing force after the member is removed from the form.

Advantages of precast concrete

In the in-situ concrete construction method, the molds for the individual construction elements are assembled on-site and filled with cast-in-place concrete. On the one hand, this ensures a great flexibility with regard to the design of the buildings and has positive effects on the structural behavior but on the other hand, the quality, time and cost benefits of the industrial production do not come into effect. The precast concrete construction method takes into account the entire costs for the shell, like material savings, lower costs for site equipment due to a shorter construction time, earlier utilization of the buildings, less maintenance etc. and not only the m^2 of wall or floor as it is done for other building materials. The advantages of precast concrete are given below;

- Offers an efficient delivery model for your project; allowing building construction to proceed while the design is developed.
- It can take nearly any shape or size, be manufactured in virtually any color and comes in a wide variety of finishes.
- Precast concrete products are manufactured off-site, under roof and are delivered ready to install when needed.
- Precast helps to compress project schedules, reduces safety concerns, reduces site disruption and reduces overall project costs by requiring fewer trades for construction and fewer people on site.
- Precast concrete structures provide superior resistance to fires, natural disasters, insects and mold.
- It offers resistance to rain, wind damage, earthquakes, termites and decay provides lower maintenance and insurance costs.
- It can also withstand many winters of freeze-thaw cycles better than other building materials.
- Costs associated with heating and cooling can be greatly reduced through concrete's thermal mass benefits. Reduced peak heating and cooling loads can be achieved because concrete reacts slowly to changes in outside temperature.
- The exterior of a precast concrete structure can be left unpainted without damage from the elements. If painting is desired, repainting is needed only every five to ten years.
- Precast concrete interiors are less subject to damage and easier to wash.
- Because of density, precast buildings absorb sound making it an ideal choice for commercial and residential buildings.

Applications of precast concrete

Precast concrete sandwich wall panels

have been used on virtually every type of building, including schools, office buildings, apartment buildings, townhouses, condominiums, hotels, motels, dormitories, and single-family homes. Although typically considered part of a building's enclosure or "envelope," they can be designed to also serve as part of the building's structural system, eliminating the need for beams and columns on the building perimeter. Besides their energy efficiency and aesthetic versatility, they also provide excellent noise attenuation, outstanding durability (resistant to rot, mold, etc.), and rapid construction. In addition to the good insulation properties, sandwich panels require fewer work phases to complete. Compared to double-walls, for example, which have to be insulated and filled with concrete on site, sandwich panels require much less labor and scaffolding.

Potential of precast concrete

Growing emphasis on reducing the overall construction time and costs are turning out to be the primary factor driving the adoption of structural building components, such as beams, piles, and foundation pillars, in the residential & non-residential construction sector. Major factors that are driving the growth of the Precast Concrete Market are rapid urbanization and industrialization, increasing investment in new construction projects, and infrastructure development. In addition, the need for reduction in construction time and cost.

Affordable housing structures and social infrastructure projects, such as hospitals, educational facilities, and community centers, are expected to be the major beneficiary of precast concrete. These projects often get delayed due to the lack of funds and paucity of labor. However, the use of precast helps reduce the construction costs and significantly reduces the need for labor. According to grandviewresearch report, Asia Pacific dominated the global precast concrete market and accounted for a revenue share of 38.5% in 2020 and will register the fastest CAGR from 2021 to 2028. The rapid growth of the infrastructure development industry coupled with wide-ranging demand for commercial and residential structures is the primary factor driving product adoption in the regional markets. Owing to benefits of precast concrete such as cost and time efficient construction is driving the market growth. Furthermore, excellent resistant properties, better durability, mechanical strength, rigidity with the minimum maintenance cost of precast concrete products have widened its application areas.

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Different types precast building systems

Precast concrete structural systems consist of elements that are fabricated in controlled conditions in enclosed factories. This means that tolerances can be accurately controlled, waste can be minimised, and that a denser, stronger and better quality concrete can be produced. Concrete is cast into forms and left to cure. Precast forms are normally made of steel or plywood. Precast elements generally incorporate steel reinforcement to resist loading stresses. A common cause of the deterioration of concrete structures is the corrosion of this reinforcement. It is important, therefore, that they are properly designed and embedded in the concrete.

Precast building systems refer to the components which are assembled to enable a specific function. Precast concrete components can be connected in many ways. In order to do this, connections are embedded in the concrete at the time of casting. This must be done with great precision. They can be grouted or concreted together. The different systems of precast concrete buildings can be grouped as, overall precast systems, systems for lateral load resistance and floor and roof systems.

Different types of precast building systems

Overall precast system

The overall precast system is required to resist lateral loads caused due to components of a building and also external pressure. It can be broadly classified into four groups namely, skeletal frame system, large panel system, cell system and block system.

Skeletal Frame System

The frames can be designed as moment-frames and often are either combined with precast shear wall systems or cast-in-situ shear walls. The speed of construction and the high quality of the components are the main benefits of using precast skeletal systems. In this frame state, precast concrete beams, rafters and trusses spanning the bays are supported on columns that can be single or multi-storey in height. The frame system can be designed for resisting lateral loads. However, there may be a need for supplemental lateral load resistance through the use of braces or walls. Skeletal frame system consists of three types, low-rise portals used in industrial and commercial buildings frames, multi-storeyed frames used in institutional and commercial buildings and slab-column system which can be cast on the ground in the footprint area of the building and then hoisted up for final elevation.

Large Panel System

Large panel structures for exterior walls consist of panels one or two stories in height and width. The panels may be blind (without openings) or with window or door openings. The panels are load-bearing and it transfers gravity loads of the panels above the supported slabs. In terms of design, the wall panels may be single-layer (solid) and multilayer (sandwich). The panels are manufactured from materials that have insulating properties and at the same time can perform supporting functions.

The panels are produced in finished form, with ready-to-paint surfaces and with windows and doors; the piping for heating and other systems and for wiring may also be installed in the panels. The surface of exterior wall panels is covered with decorative mortar or is faced with ceramic or other finishing tiles. After assembly, the joints between panels are filled with mortar or with lightweight or ordinary concrete and then sealed with elastic packing and special mastics. It is suitable for buildings that require close partitioning of space. With proper joints, the system has adequate strength and stiffness for resisting lateral loads.

Cell/ box System

The development of the box system makes it possible to manufacture an entire completed product in the factory. “box-module structures” are buildings with a fireproof and permanent design in concrete construction. Here the entire structure is factory-built, then

Precast building systems

split into modules, and transported to the construction site. In this system, the orthogonal walls and slabs are cast together as integral units to create box-type structure. The box system offers advantages such as cost reduction, quick mounting, timely completion of works, and minimization of material losses, thus serving to create higher-quality physical spaces. The system is suitable for enclosed spaces.

Block System

The blocks with a rectangular or quadrangular prism shape contain a normal weight hydraulic concrete casing, lightweight concrete or similar material, for building walls or slabs. They can be reinforced by placing bears in hollow spaces and thereafter grouting the spaces. For walls, the blocks are tongued and grooved on the top and bottom sides and placed horizontally one on top of the other using block or similar adhesive there between. In the corners or „T" intersections, blocks are alternatively placed and form armed head frames for stability and resistance. These are suitable buildings with lesser height.

Lateral load resistance system

A lateral force-resisting system is supposed to be both performance-based and cost-effective. Every lateral resisting system has its unique benefits and difficulties for each design and environmental situation. The design of precast, prestressed concrete structures depends on the integration of the structural system as a whole, the connections, and the individual components. Each aspect must consider the others as well as the functional requirements imposed by the building use. There are a variety of precast concrete designs that can be used to achieve these goals economically and effectively. Hence for seismic resistance for high rise structures, it is important to provide an exclusive Lateral Load Resisting System (LLRS) which will supplement the behavior of moment-resisting frames in resisting the lateral load. The dual structural system consisting of a special moment-resisting frame (SMRF) and concrete shear wall has better seismic performance due to improved lateral stiffness and lateral strength. A well-designed system of shear walls in a building frame improves its seismic performance significantly.

There are different types of systems that provide resistance to the lateral loads, they are discussed below.

Portal frames

Portal frames are generally low-rise structures, comprising columns and horizontal or pitched rafters, connected by moment-resisting connections. Resistance to lateral and vertical actions is provided by the rigidity of the connections and the bending stiffness of the members, which is increased by a suitable haunch or deepening of the rafter sections. This form of continuous frame structure is stable in its plane and provides a clear span that is unobstructed by bracing.

Multi-storey frame structure

The resistance to load in a multi-storey frame structure is generated from the frame action of the beams and columns and rigidity of the beam-to-column joints. The lateral load depends on the connections of the members, Multi-storied frames are divided into three categories, frames beam- to- column connection, frames with dry-jointed beam-to-column connection and dual system.

Wall system

Precast walls are energy efficient due to a high thermal mass that enables materials to absorb and store tempera-

Portal frames

Multi-storey precast frame

Wall system

tures at a more constant rate. This system, it reduces the fluctuation of temperatures within the building. Since precast wall panels are manufactured in a production facility, the impact that these panels impose on site is minimal. This helps reduce the space needed on a job site. Precast wall panels can be customized to the architect's or owner's desire. There are two kinds of wall systems. In the first type, load-bearing is provided in orthogonal directions and in second type load-bearing is provided in the longitudinal direction.

Roof and Floor system

These are produced off-site at the production facility. The floor and roof system can be easily installed with concrete structures. Designed to provide precise adjustments and fine-tuning, Floor and Roof System panels can form the roof of a single and multi-storey building. When used in multi-story buildings, the panels form the elevated slab of an upper level and simultaneously provide the ceiling attachment points for the level below. The joists incorporated in the Floor and Roof System provide ample space for the easy installation of ventilation ducts, electrical lines and plumbing lines. A variety of joist depths can be selected to facilitate the placement of trade requirements and ceiling attachments such as step-downs and coffers. Openings in any slab can be precast at the production facility.

Concrete roof systems have three basic advantages over competitive materials- esthetic appeal, structural economy and functional utility. They are very economical, readily available, easily shipped and erected and contribute to early building occupancy. They are available as custom precast concrete products or are sold under several trade names. Since their production is highly industrialized, their cost is low. These are made of arches & shells and suitable for industrial and commercial building.

There is a great need for a durable precast concrete floor structure that is lighter, stronger and more energy-efficient, and one that can be manufactured in variable sizes. For added strength, prestressing strands are cast into the panels during production. Floor system components consist of floor units, spandrel units and interior beams.

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Precast Roof System

Fast Forward your construction with Robo Acotec walls

Robo Acotec walls are manufactured by casting concrete in a reusable wall mold or form which is then cured in a controlled environment. It speeds up the construction process. It can be used as load-bearing structures and will save costs by eliminating the need for an additional structural framing system. It can be produced with textures including form liner shapes, artwork, and lettering to provide distinctive accent treatments. The product is manufactured under the strictest quality control monitoring processes by Robomatic Precon Pvt Ltd.

Robo Acotec walls are concrete Hollow Core walls made with M25 grade concrete, manufactured in a fully automated machine imported from FINLAND. These are produced by plain concrete with cylindrical hollow cores running longitudinally which reduces self-weight and facilitates easy incorporation of mechanical, electrical and plumbing services. The sides of the panels are tongued and grooved for positive jointing.

These are extruded non loadbearing concrete walls, manufactured in fully automated machines under strictest quality control monitoring process. The panels facilitate mechanical, electrical and plumbing through hollows, increasing thermal and insulative properties. Construction using the Robo Acotec wall is cost and resource efficient. The wall doesn't require plastering or lintel construction. Robomatic wall panels are energy efficient, recycla-

ble and reusable.

Why choose Robo Acotec walls ?

Faster

Construction time is 7x times faster than the regular brick wall construction and 5x times faster than AAC blocks.

Minimum resource requirement

Construction using Robo Acotec wall is cost and resource efficient. These ROBO walls don't require plastering or Lintel Construction. These ROBO walls fit in perfectly and can be painted directly reduced wastage during the construction process.

Vijay K Kosaraju
MD,
Robomatic Precon Pvt. Ltd.

"We are dedicated to improve the performance and experience of your entire operation from manufacturing to installation of the Robo Acotec walls at the site."

Flexibility and aesthetics

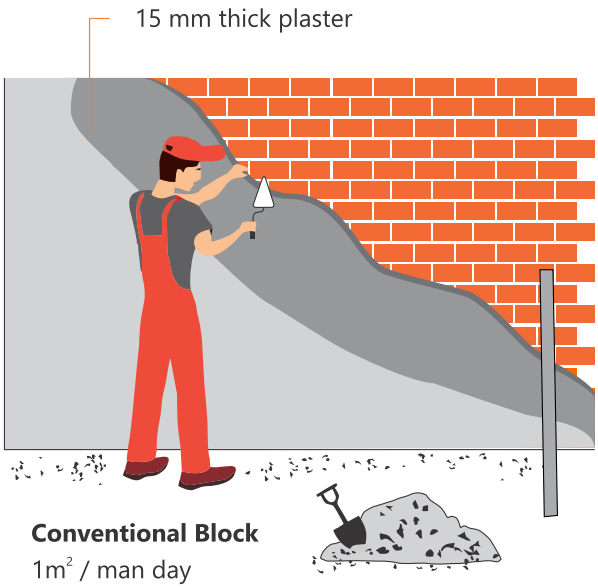
You can plan and execute designs accurately and achieve structural efficiency due to variable sizes and dimensions of the Robo Acotec walls.

Energy efficient

Robo Acotec walls are energy efficient, recyclable and reusable with minimal waste during the production process too.

Insulative and space management

The Robo Acotec wall support mechanical, electrical and plumbing service, and provide excellent thermal and sound insulation. These walls permit



Conventional Block
1m^2 / man day

ROBOMATIC 7m^2 / man day
7x Faster

larger carpet area and extended space management.

Advantages of Robo Acotec Walls

- Easy and quick to install, 7 times faster than conventional wall construction.
- Light in weight reduces the dead weight of the structure.
- Gives more carpet area with less thickness of walls maintaining superior strengths.
- Cheaper than conventional walls.
- No Plastering required.
- Lower thermal conductivity and Lower coefficient of thermal expansion.
- Labour free experience for the client.
- Easy to run electrical conduits when compared to brick wall construction.
- No curing required.

Applications of Robo Acotec Walls

High durability, reduced weight and wastage, and competitive construction costs make these walls an ideal choice for construction of residential, industrial, commercial and institutional projects. The Robo Acotec walls facilitate mechanical, electrical and plumbing through hollows, thereby increasing thermal and insulative properties. The tongue and grooved panels assure perfect and seamless jointing.

Robomatic Hollow Core Walls Plant

Our projects

L&T Hyderabad International Airport

Kovai Medical College and Hospital - Coimbatore - KEF Katerra

Express Exclusive Residence - Chennai - KEF Katerra

Galaxy Towers - Hyderabad Aurobindo

NRSC-ISRO-Hyderabad

Anvaya Convention-Hyderabad

About Robomatic

Robomatic Precon Pvt Ltd is the manufacturer of ROBO Acotec wall panels in India. The company was incorporated in the year 2016 and headquartered in Hyderabad, Telangana, India. The company is focused on making the process of construction and infrastructure development faster for residential, commercial and industrial projects. Using the automated production line, the company produces Robo Acotec wall panels for the construction of medium to high rise buildings.

About founder

Vijay K Kosaraju is the Founder and Managing Director, Robomatic Precon Pvt. Ltd., a company that manufactures hollow core wall panels which are easy to install and faster then conventional wall construction. In addition, he has also been leading the Robo Silicon Pvt. Ltd. group for 17 years after laying its foundation in 2000 and he is the Founder and Managing Director of Robotek Buildcon and Rotek Infra Pvt. Ltd.

Materials for precast concrete buildings

Precast concrete has high strength, low porosity, low moisture absorption and greater durability. Its fluid consistency allows it to be moulded into complex and intricate shapes. It can be fully reinforced to form large storey-high panels that can be crane-handled, making site installation fast and less labour intensive. Precast concrete as a structural engineered stone offers new possibilities in expressing the intrinsic qualities of the raw materials. The precast element could be made of reinforced and /or pre-stressed concrete. The behavior of reinforced and prestressed concrete under service loads and at the ultimate limit is to a large extent dependent on the properties of the material composition as well as the manufacturing process. The versatility of this structural and architectural product is enhanced by production under factory conditions. There are various types of materials incorporated for precast buildings, each of them is explained below.

Different types of materials for precast concrete buildings

Supplementary Cementitious Material

Supplementary cementitious materials are natural materials or industrial byproducts that exhibit cementitious behaviors when combined with either water or water and other compounds. SCMs enhance the results of ordinary portland cement (OPC) hydration reactions in concrete and are either incorporated into concrete mixes as a partial replacement for portland cement or blended into the cement during manufacturing. SCMs augment cement's actions and can improve fresh concrete characteristics, strengthen hardened concrete properties and reduce raw material costs.

Aggregates

Aggregates for precast concrete should be durable. They should not deteriorate or disintegrate under the action of the weather. Items for consideration under weathering action are freezing, thawing, variations in moisture content, and temperature changes. Special Aggregates may be required to give desired features such as color and texture for exposed aggregates surfaces. Where special aggregates are

used it is better to stockpile them at the beginning of a project for avoiding variations in supply. Gap-graded aggregates will give the most uniform exposed aggregate surface.

Waterproofing admixture

Waterproofing admixture is a great option for precast buildings. Integral crystalline admixture powder specifically formulated to interact with concrete capillary pore structures to provide a waterproofing system that is a permanent part of the concrete. These can be used in above- and below-grade applications. Active chemicals combine with the free lime and moisture present in the capillary tracts and pores, to form insoluble crystalline complexes. These crystals block the capillaries and minor shrinkage cracks in the concrete to prevent any further water ingress.

Pigments

Oxide pigments are commonly used to colour precast concrete. Pigments are available in a wide range of colours from deep to pale pastel hues. The major non-blended standard pigments are green, black, red, brown, yellow, blue and white. These can be obtained in the commercially blended form to produce many intermediate colours.

Reinforcement bars

Bars are classified by shape, ductility, class, strength grade and size. The physical properties, chemical compositions and geometry of ribs and lungs in case of steel reinforcement shall be in conformity with IS; 1786-2008.

Coating

Proper detailing is considered sufficient to protect reinforcing steel for the normal life of a structure. The most commonly used coating is zinc-based. It provides appropriate thickness in the form of hot-dip galvanization. It should not be coupled with dissimilar metals.

Joints

Architectural joints are designed to hold the cladding, connection points by evaluating the effects of structural movement on the cladding. The precast concrete manufacturer designs the cladding for the specified loads, erection loads and connection details. The precast panel is independently

supported to the building structure using an assemblage of metal components and anchors. Joints around each of the precast panels are usually filled with sealant.

Structural joints generally placed at various intervals to allow for the expansion / contraction of the materials. There are two kinds of joints that can be distinguished Dry and Wet joints Dry Joint is accomplished by simple placing of two members by means of welding or fastening. Wet Joint requires not only casting with cement but also concreting and grouting material.

Lightweight Concrete Aggregate

Lightweight aggregate concrete can be made by injecting air into the composition of concrete. It will make the concrete contained with an air bubble which can reduce the weight and the density of concrete. The other way to produce this concrete is by replacing the aggregate by hollow, cellular and porous aggregate. The aggregates used in structural lightweight concrete may be a combination of fractions of both lightweight coarse and fine materials and light-

weight coarse material with an appropriate, natural fine aggregate.

Fibers

Fibers can be used as reinforcement in precast concrete, either as a fiber-only solution or as a combined solution with conventional rebar reinforcement. Fiber-reinforced concrete in precast construction increases its structural integrity. It contains short discrete fibers that are uniformly distributed and randomly oriented. Blends of both steel and polymeric fibers are often used in construction projects in order to combine the benefits of both products; structural improvements provided by steel fibers and the resistance to explosive spalling and plastic shrinkage improvements provided by polymeric fibers. In certain specific circumstances, steel fiber or macro synthetic fibers can entirely replace traditional steel reinforcement bars in reinforced concrete.

Non-shrink grouts

Non-shrink grout when hardened under stipulated test conditions, does not shrink, so its final volume is greater than or equal to the originally installed volume. It is often used as a transfer medium between load-bearing members.

Epoxy grouts

The physical properties of epoxy vary widely so the user should be familiar with the compounds to be used. Epoxy grouts are used

when very high strength is desired to the concrete. Design, detailing, and proper material specification of field-cast grouts are critical for a number of reasons. They are mixtures of epoxy resins and filler material, mostly sand.

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Geneva Pipe and Precast Introduces the Perfect Pipe and Perfect Lined Manhole System

Proven mechanically resistant to raw sewer, Perfect Pipe and Perfect Lined Manhole are revolutionizing municipal wastewater management. The corrosion resistant pipe and manhole system has an anchored liner that provides 100% coverage and creates a smooth laminar flow with a tight seal. Utilizing an innovative design, the joints require no field welds in most sizes and can connect to most new or existing systems. Both Perfect Pipe and Perfect Lined Manhole System have a design life of 100+ years in most sanitary sewer environments.

Perfect Pipe consists of Reinforced Concrete Pipe (RCP) with an integrated High Density Polyethylene (HDPE) liner that is wet-cast in the pipe wall forming a corrosion-proof barrier. The pipe is Ideal in direct bury, trenchless, high loading, and high ground water applications. Perfect Lined Manhole System integrates a monolithic base and a Fiber Reinforced Plastic (FRP) liner with HDPE protected riser sections and lid. The one-pour base eliminates cold joints and connects to nearly any plastic, clay, concrete, or fiberglass sewer pipe.

"Using technology developed in Europe, we are now manufacturing Perfect Pipe and Perfect Lined Manhole Systems at our Geneva plant. The Perfect System truly provides superior performance and longevity over other sanitary sewer options," said Scott Montross, President and CEO of Northwest Pipe Company. "We look forward to working with regional engineers and municipalities as we demonstrate how the Perfect System offers a completely leak-proof and low maintenance sewer management solution."

NEWS

South Africa refines construction of precast-concrete reservoirs

Precast concrete has helped to accelerate and mitigate risks on complex civil-engineering construction projects the world over. This includes on demanding reservoir projects that are traditionally built using cast-in-place concrete methods.

South Africa has gradually followed suit with many municipalities and their engineering teams now also specifying precast concrete reservoirs in the early phases of water-augmentation projects to overcome many of the challenges associated with constructing these structures using in-situ methods.

Located in large cities and rural areas, the more recent precast-concrete reservoir projects in the country range in sizes of between 10ML to 35ML. Together, these projects constitute about 350ML of water-storage capacity.

This modular approach saves time in constructing these structures and, in so doing, mitigating the potential risk of project delays and cost overruns. Using the precast concrete system, reservoirs can be constructed significantly faster than cast-in-place methods.

British Precast to merge with MPA

The UK's concrete producers will be represented for the first time in one trade association to help accelerate the industry's journey towards beyond net zero carbon emissions by 2050.

British Precast, the trade body of the country's precast concrete producers, will merge with the Mineral Products Association (MPA) from 01 January 2022.

The combined association will encompass the production of ready-mixed concrete and the manufacture of precast concrete products, from building blocks and paving slabs to structural flooring, drainage systems, railway sleepers and other essential construction components.

The merger will enable a more integrated approach as the UK concrete and cement industry implements its ambitious 'Roadmap to Beyond Net Zero' responding to the urgent challenges of climate change and the need for more sustainable construction.

SCIB buys Kencana Precast in expansion plan

Concrete product maker Sarawak Consolidated Industries Bhd (SCIB) is buying loss-making Kencana Precast Concrete Sdn Bhd (KPCSB) for RM4.98mil cash, to explore business expansion plans in Peninsular Malaysia.

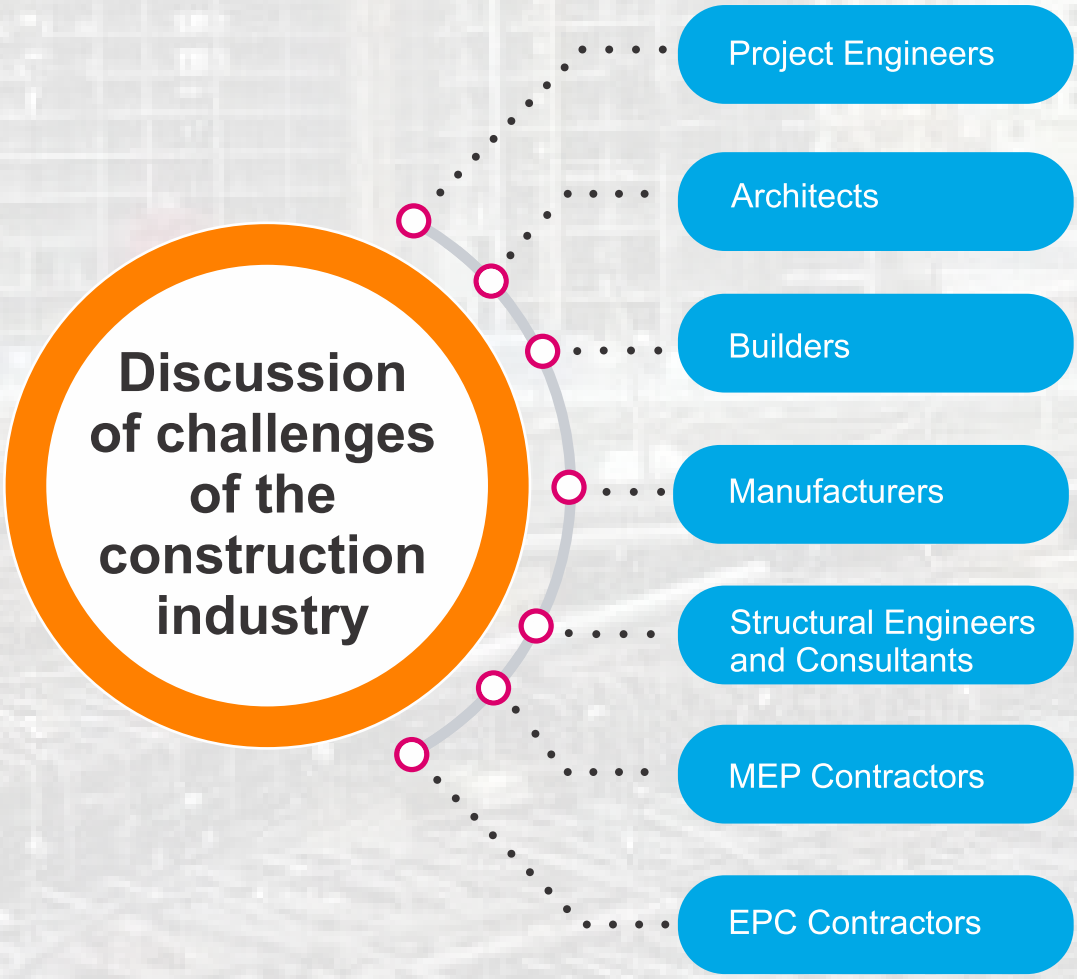
In a Bursa filing, SCIB said the group had on April 14, entered into a conditional share sale agreement with KPCSB owners Noorazylawati Abdul Bakar, Mohd Khairil Mohd Hatta and Ibrahim Mohd Noor for the deal, which is expected to completed by the second quarter of this year.

KPCSB which is involved in construction, has its business address in Taman Equine, Seri Kembangan, Selangor.

The deal will be funded via internally generated funds and bank borrowings, and upon completion, KPCSB will become a wholly-owned subsidiary of SCIB.

What is the huss about eMagazine

eMagazine is a digital medium for interaction among the various personnel among the construction industry namely, Manufacturers, Business to Business users and the Civil Engineering professionals.



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