

Formwork UPDATES



PASCHAL for the 1st time at the Excon International Construction Equipment and Construction Technology Trade Fair

Transforming hydropower into electricity.

2,400 apartments are to be built using Modular universal formwork





Editorial

Dear reader,

We are glad to invite you to visit our booth during the „EXCON 2017“ taking place in Bengaluru from 12th to 16th of December 2017.



For us, it is a unique opportunity to meet you personally in a special atmosphere. We are glad to present our product portfolio.

Be welcome!

Cordially your,

Eldo Varghese
General Director
PASCHAL Form Work (India) Pvt. Ltd.

PASCHAL for the 1st time at the Excon International Construction Equipment and Construction Technology Trade Fair

At the Excon exhibition in Bengaluru from the 12th to the 16th of December 2017, PASCHAL will present wall, column and slab formwork

Given its long-standing presence in the Indian construction market, PASCHAL is concentrating its exhibits on the primary applications in the Indian world.

In hall 4, booth S546 PASCHAL will demonstrate the practical application options, the system diversity and the compatibility of the systems and components for quick and easy use in reinforced concrete construction on a 42 m² booth. Upon request extre-

mely well-trained formwork experts with a great deal of practical experience will show visitors to the booth the simple handling and also some of the numerous constructions and projects completed.

The following will be presented and demonstrated at Excon in Bengaluru:

Modular formwork



Modular universal formwork on a building site in India.

The Modular universal formwork is preferred for use in formwork for foundations, walls, columns, beams, shafts and pre-cast concrete components. As a result of the comprehensive range of elements, it can be used both as hand-set and large-size formwork. The modular design principle enables simple and quick handling, even by unskilled labour.

Modular column formwork



The adjustable Modular column formwork in practical use.



As a practical system expansion of the Modular formwork system, at Excon PASCHAL will be exhibiting the adjustable Modular column formwork with which both square and rectangular reinforced concrete columns with external dimensions from 20 to 50 cm in increments of 5 centimetres can be formed. The simple windmill principle allows you to form a wide variety of different reinforced concrete columns from just a few individual panels of the adjustable Modular column formwork. Depending on availability and space constraints, the formwork systems can be moved completely by using a crane or can be dismantled into individual components and transported, assembled and dismantled manually.

LOGO column formwork



Components from the Logo system can be used as column formwork with the special advantage that you can use already existing material. You do not need any special column panels, but simply take the same LOGO multi-purpose panels which you otherwise use to form right-angled corners.

PASCHAL Deck



PASCHAL Deck - versatile slab formwork for ceilings in residential and industrial buildings.

PASCHAL Deck is a flexible slab formwork consisting of three main components:

- Plywood
- H 20 girder
- Slab prop

This system is ideal for use with different slab thicknesses, as only the statically necessary parts are used. Loose plywood plates, supported by H 20 girders, (cross girders) serve as decking. The same H 20 girders are used as main girders to support the cross girders. The same parts can be used in both directions.

The flexibility of the system, i.e. its ability to adapt to various different room sizes, comes from the overlapping of the H 20 girders. It is of no significance whether the girders are used as main girders or cross girders. Overlapping in any dimension is possible in either direction. Similarly the main girders and cross girders can be turned in the statically required direction for slanting T-walls, wall abutments, bays, circular structures, etc.



Transforming hydropower into electricity.

As India expands its hydropower potential, PASCHAL is there to help.

The ongoing construction project, the “Lower Baitarani small Hydro power project, Odisha” in Keonjhar District needs about 50,000 m² of formwork. In this remote area, Modular universal formwork is used.

India is the seventh largest producer of electrical energy from hydropower and has built more dams to harness the power of water than any other country in the world. In order to develop this energy source further, a 24 MW hydroelectric power station with the project name “Lower Baitarani small Hydro power project, Odisha” is to be built near Singhanali Village, Anandpur Taluq in Keonjhar District with support from PASCHAL Formwork (India) Pvt. Ltd.

Casting of 50,000 m² of reinforced concrete by reusing the formwork 80 times

The Modular universal formwork from PASCHAL will be used to provide formwork for an area of about 50,000 m² of reinforced concrete. PASCHAL's customer, M / S. Baitarani Power Project Private Limited, is a sub-sidiary of the RPP Group and has purchased 630 m² of the flexible, rugged Modular elements for this purpose.

In order to be able to shutter the reinforced concrete structures with this quantity of formwork, the engineers at PASCHAL Formwork (India) Pvt. Ltd. analysed the construction drawings and prepared a suitable formwork concept in advance, including the formwork and cycle plan, so that the 630 m² of Modular formwork could be used in 80 cycles, an impressive testament to the durability of the Modular product.

One formwork system for foundations, piers and lateral walls

The reinforced concrete structures of the dam include a dam wall, two lateral walls which converge in the manner of a funnel, and reinforced concrete pier structures rounded on both sides. The floodgate anchors are integrated into these as resilient U-shaped structures.

These pier structures are to be built with different dimensions and they vary in length from 10.50 m to 25.50 m. They will be 12.50 m and 14.50 m high and 0.90 m and 3.00 m thick respectively.

The two funnel-shaped lateral wall structures each have a component length of 76.00 m. The wall has a uniform height of 11.50 m and is 1.25 m thick.



With the Modular elements, formwork will be provided for over 50,000 m² to build another dam in India



The half-rounded dam wall on the right side of the dam when viewed from the valley below is 32.835 m long, 15.50 m high and 2.25 m thick.

The left side wall extending at right angles has a total length of 110.00 m, a height of 15.50 m, and is also 2.25 m thick.

When providing the formwork for the lateral walls as well as the pier structures which are half-rounded at the front and rear, the U-shaped guide bearings for the gates are also formed with the Modular universal formwork. They are created as 80 cm deep, 1.50 m wide recesses in the immense re-inforced concrete structures.

In order to shutter the rounded reinforced concrete structures, PASCHAL Formwork (India) Pvt. Ltd. constructed a customized design based on Modular formwork for its customer M / S. Baitarani Power Project Limited.

Modular universal formwork

The range of elements available for everyday applications guarantees that the formwork can be used even for complicated geometries, as the project in India shows most convincingly. The simple, sturdy formwork construction demonstrates its stability even in subtropical climates. It is supremely reliable and versatile, ideal for large projects.

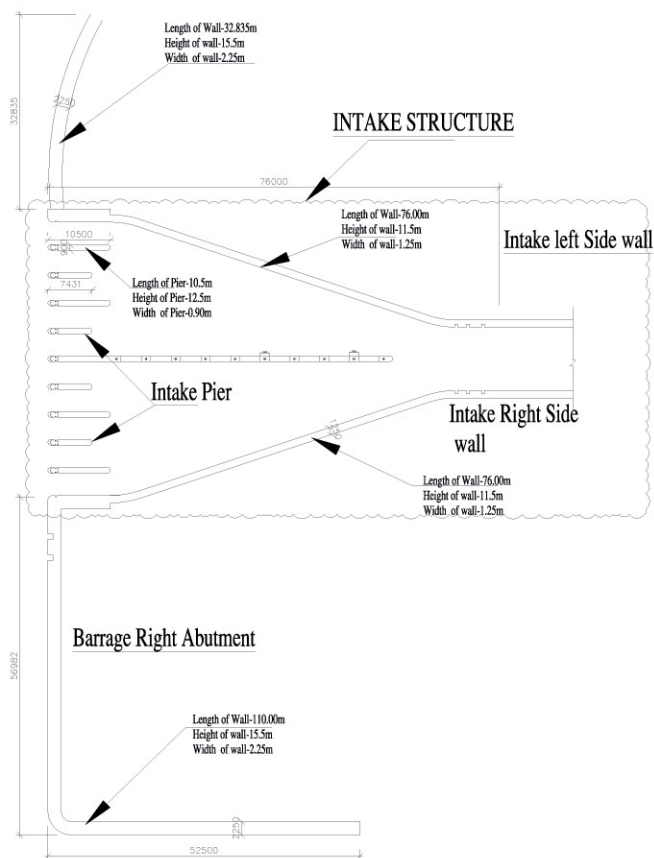
Logistical support included

Since the dam is being built in such a remote region, the delivery of the Modular formwork, the props, the accessories and consumables had, of course, to be organised as well. PASCHAL Formwork (India) Pvt. Ltd. took charge of this as well, and delivered everything ready for use at the site with a fleet of 40-foot trucks.

On-site service

Since M / S. Baitarani Power Project Private Limited was using the Modular system for the first time, the PASCHAL engineers provided on-site instruction in its use. This also underlined the advantages of Modular universal formwork, as the extensive range of elements and ease of use are self-evident, thereby helping to ensure that the components are used correctly, even by personnel with little experience. Their sturdy flat steel frame construction means the elements can withstand „rough“ handling from time to time.

Barrage Right Abutment



Detail from dam construction drawing.



Shuttering height of up to 3.75 m reached with three element heights of 1.25 m each. The semi-rounded formwork unit was custom made by PASCHAL Formwork (India) Pvt. Ltd. for the construction company M / S. Baitarani Power Project Private Limited.



2,400 apartments are to be built using Modular universal formwork

A luxury residential complex is currently under construction using Modular universal formwork in the prosperous Indian state of Telangana.

In Hyderabad, the capital city of Telangana State, India, prestigious companies are developing together with the long-standing PASCHAL customer M / S. Tata Projects Limited on the joint development of a modern residential complex. The complex will occupy 20 acres and will consist of 2,400 apartments in 17 apartment towers and 10 storey high each. The project will last 36 months.

In a second phase, further facilities will be built, including a clubhouse, a gym, shops and the like. PASCHAL formwork has proven itself for its quality products with Ms Tata projects Limited in several projects. With the same belief from Ms TATA Projects Limited, PASCHAL Formwork has supplied Modular universal formwork system for reinforced concrete columns and bracing shear walls primarily at Rajendra nagar residential project.

Extraordinary productivity

A total of 163,980 m² vertical formwork area is to be completed in about 24 months using only 611 m² Modular panels. In order to achieve a productivity rate of 12.0 m², per man-day, the construction team received training on site from the PASCHAL engineers, as well as a prepared formwork schedule and an ingenious concreting cycle plan. According to the schedule, 3 apartment towers with 35 reinforced concrete columns, i.e. 105 columns per storey, will be casted and concreted at a time. The schedule provides for 5 working days for each. On the 6th day, the formwork will be removed and the Modular formwork units will be transferred to the next cycle.

Quality based on experience

The Modular formwork is often used by M/S. Tata Projects Limited because of its extensive range of elements, which enables it to be adapted very easily to the requirements of a given project and the construction workers are easily able to master the

simple, versatile system, such as the easy-to-use but effective connecting keybolts. Moreover, the formwork units are designed to be sturdy and durable, so the purchase of this formwork represents a profitable investment for M/S. Tata Projects Limited. This long-standing PASCHAL customer therefore considers itself well advised to use PASCHAL premium brand in this project as well, since not only





the performance quality but also the demanding schedule providing for 268 deployments have so far been met.

As of March 2017, building progress was on schedule according to the plan, a very important concern for the building principal.

Modular, the universal formwork

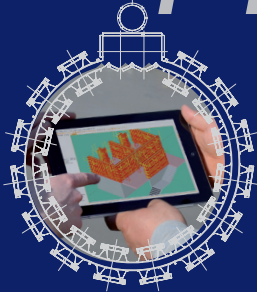
Modular universal formwork is particularly well suited to the Indian market, because its stable flat frame, simple connection technology and practical ran-

ge of elements mean that the Modular can be used in a host of different applications. The Modular elements can be transported and erected by hand and then installed in place as a complete formwork unit with the aid of a crane. For this purpose, it is equipped with a crane lifting system which enables a crane to safely lift up to 24 m² and 600 kg.



With the Modular elements, formwork will be provided for over 50,000 m² to build another dam in India

Happy New Year!



**„One should, when overwhelmed
by the shadow of a giant, move aside
and see if the colossal shadow isn't merely
that of a pygmy blocking out the sun.“**
(Novalis)

Dear Sirs,

Thank you very much for the pleasant cooperation
and for your confidence.
We wish you a merry Christmas and a prosperous,
successful New Year.

Your PASCHAL team



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