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Press release

**Las Bambas copper mine: Positive outlook for construction progress in the Andes**

**The site of the new Las Bambas copper mine is in one of the remotest regions of the Andes. The work on building the ore-extraction infrastructure is currently the biggest construction project in Peru, comprising several crushing plants, tunnels and a dam. Contractors Bechtel have taken up the manifold challenges of this vast new facility located at over 4000 m above sea level, with Doka at their side as their partner for formwork technology.**

Peru is the world’s third-largest producer of copper and is blessed with rich deposits of this sought-after mineral. The Las Bambas mine is in a remote location 72 km far from Cusco, near the fabled Inca citadel of Machu Picchu. Work on building the infrastructure of the mine has been in full swing since 2011, so that from 2014 onwards approx. 51 m tonnes of ore a year can be extracted from three giant open pits. Las Bambas is expected to produce 400,000 tonnes of copper concentrate annually, making it Peru’s biggest mine.

Having been appointed lead contractor for this megaproject, Bechtel turned to Doka as an experienced partner to work with it. As well as Bechtel’s positive experience with Doka on other projects in Latin America, Doka’s ability to quickly provide large quantities of formwork equipment, and the reliability of its safety systems, were key factors behind the award of the contract. Doka Formwork Experts from Chile and Austria worked together to find a suitable solution for the very demanding requirements of this project. For the new Doka subsidiary in Peru, established only in 2012, this major project was its first-ever order.

Versatile systems in a tough environment

The geographical location of the jobsites presents a great challenge in itself. They are in the centre of the high plateau of the Peruvian Andes, at an elevation of over 4000 m. There is only one narrow gravel 70 km road leading to the site, and transporting formwork equipment from the depot to the mine can take up to a week. What is more, the situation on the ground means that the construction plan is very often changed at short notice: “Thanks to our decades of experience with large-scale projects, and to the flexibility of our formwork systems, we can always react very quickly to these changes”, explains Andreas Winter, Doka’s Project Manager in Peru.

The mine facility is very extensive, with construction work taking place both above and below ground. It comprises installations for crushing the extracted copper ore, tunnel systems, buildings for further processing of the raw materials, a dam and a reservoir.

Individual solution for extreme conditions

The sheer scale of this construction project and of its various sub-projects means that huge quantities of formwork equipment are in service. Most of the works are being carried out using 4500 m2 of Framed formwork Framax Xlife and 500 m3 of Load-bearing towers Staxo 100.

The ore breaking and crushing installations comprise outsize foundations, concrete blocks and steelwork, on which the machinery is stood. The high-performing Framed formwork Framax Xlife system is ideal for large areas of this type, and for high walls. Casting sections of up to 7 m in height can swiftly be accomplished with it. The logical system-grid also makes the product simpler to handle, and fast to erect and dismantle. The crane-jumped Climbing formwork MF240 is being used for the massive walls of the crushing plants. It is suitable for any height and type of structure, for quickly ‘getting up to height’. The 2 m to 2.5 m thick slabs, with steel inserts, necessitate the use of a stop-end formwork in the form of a single-sided wall. Doka is fulfilling these requirements with its Dam formwork D22 system. Specially designed for mass concrete structures, it makes it possible to pour block heights of up to 4 m in a single workstep. Another Doka system on ‘special assignment’ in the building of the crushing installations is the Folding platform K. This pre-assembled scaffold platform is adaptable to suit all usage situations: at Las Bambas, it is being used both as a climbing formwork system and also to put up facade scaffolds.

Dependable products for many different challenges

Construction of the two approximately 80 m long tunnels has presented the site-team with some formidable challenges. It is through these 9 m wide and over 9 m high tunnels that the excavated material will be transported. Parts of the conveyor belts are scheduled to be prepared before the forming operations have even finished. The walls are being formed up to a height of 7 m ‘in one go’, in three up to 32 m long casting sections, using Framax framed formwork. The sturdy Load-bearing tower Staxo 100 system is being used for the slabs – some of them extremely thick – of these structures.

The mine infrastructure also includes a number of different tanks which will serve as sedimentation basins for effluent treatment. In these turbulence-free basins, certain water-borne substances settle and are separated out by gravity. The large tanks have diameters of up to 80 m. The circular tanks, with several different radii, are being flexibly formed with a curved Top 50 custom solution. This circular formwork can be adapted to virtually any radius above 3.5 m.

A short distance from the mine, a small dam is being built to supply the site with fresh water. This 8 m tall and 70 m long dam is being formed and cast in a very straightforward manner using a solution consisting of Framax framed formwork, Doka supporting construction frames and Dam formwork D22. These custom solutions, and the flexibility with which the systems can be used, also had a convincing impact upon Bechtel’s Technical Manager Carlos Fortio: “Doka is a reliable partner to work with, and this excellent working relationship helps us accomplish all projects swiftly and surely. Like this one, where we’re on schedule and so on target for success.”

**In brief**

**Las Bambas copper mine**

Location: 72 km far from Cusco, Peru

Lead contractor: Bechtel Peru

Start of construction: September 2011

Completion scheduled for: Autumn 2014

Types of structure: Crushing plants, tunnels, tanks and dams

Systems in use: Products: Climbing formwork MF240, Folding platform K, Dam formwork D22, Top 50 custom formwork, Framed formwork Framax Xlife, Supporting construction frame

**About Doka:**

Doka is a world leader in developing, manufacturing and distributing formwork technology for use in all fields of the construction sector. With more than 160 sales and logistics facilities in over 70 countries, the Doka Group has a highly efficient distribution network which ensures that equipment and technical support are provided swiftly and professionally. An enterprise forming part of the Umdasch Group, the Doka Group employs a worldwide workforce of more than 6000.

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**Captions:**

Doka\_2013\_08\_Las\_Bambas\_IMG\_01

What will soon be Peru’s biggest copper mine is under construction at an elevation of over 4000 m above sea level. The extensive mine infrastructure is taking shape with the aid of versatile formwork systems such as Dam formwork D22 and Framed formwork Framax Xlife.

Photo: Doka