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Off-standard chain hoist for nickel mine in New Caledonia 30t hoists at the end of the world

There are not many hoists as compact as the AS7 wire rope hoist from STAHL CraneSystems. However for some projects even the most compact wire rope hoist can reach its limits. In this unusual order STAHL CraneSystems needed to utilise literally every centimetre of the customer's shop. The customer needed hoists with extremely short approach dimensions on both sides of the crane. They needed to have true vertical lift, run on a reduced track gauge of 2 metres and: lift 30 tonnes!

New Caledonia is a small group of islands in the South Pacific, east of Australia. The country is approximately half the size of Switzerland and after Russia, Australia and Canada holds the world's largest unmined nickel deposits. The Koniambo Nickel SAS has been working a nickel mine here for some years now. This major project is a joint venture of the Société Minière du Sud Pacifique and the internationally active Xstrata Group, one of the world's largest mining companies. The »Koniambo Nickel Mine Project« is to be completed in 2015 and extract nickel from the laterite rock for at least 25 years.

What do STAHL CraneSystems R&D staff do if a customer provides a concrete specification and none of the standard hoists matches? They develop a customized solution. The operator of the Koniambo mine needed for the maintenance crane in one of the metallurgical plants two 30 tonne hoists with true vertical lift that could work extremely close to the walls. 30 tonnes is a typical load capacity for a wire rope hoist such as the AS7, however dimensions and drum length rule this out. Chain hoists are much more compact and have true vertical lift, but the standard design only lifts just over 6 t. The solution found by the STAHL CraneSystems engineers was an off-standard chain hoist comprising four combined ST60 units mounted together on an equally off-standard double rail crab. Chains with 12/1 reeving with a total length of 130 metres give the hoist the required traction force. To utilise the low ceiling height to the full, the engineers also developed off-standard suspension crane carriages for the two doublegirder suspension cranes.

How does an off-standard hoist get from Künzelsau to New Caledonia, at the other end of the world?

STAHL CraneSystems has subsidiaries and sales partners all over the world. One of these partners is Excellift, one of Malaysia's leading crane builders. Excellift collaborates closely in Malaysia with the international systems manufacturer Technip, a major company for project management, engineering and design of plants for the oil and gas industry.

Technip received the order for project management for building the Koniambo Mine in 2007 and also supplies metallurgical production plants to New Caledonia. Technip's positive experiences with Excellift made getting the Malayan crane builder on board an obvious choice. STAHL CraneSystems started engineering and produced the off-standard chain hoists in summer 2010. They were packed in Künzelsau, Germany in August 2010 and began their journey to Malaysia. In addition to the two off-standard chain hoists STAHL CraneSystems supplied many other hoists and crane components to Excellift. Excellift subjected the off-standard chain hoists to a full functional and load test in its factory in Kuala Lumpur in March 2011, delivery was in May 2011.

Pictures and legends:



Before delivery, the crane was fully assembled and subjected to an approval test in Excellift's factory. The specially developed suspension crane end carriages can be seen on the above picture. Thanks to the 12/1 reeving of the chains with a total length of 130 metres the chain hoist achieved an S.W.L. of 30 t.

