

ANDUSTRY news



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ANDUS GROUP SERVING THE INDUSTRY

SUNNY OUTLOOK

In May our 2013 annual figures were presented. It was another good year. A year of unchanged revenue and profit. Something we are quite happy with these days. 2014 will once again prove a stable year. Some operating companies are actually exceeding expectations, but unfortunately others are experiencing difficulties. Especially those primarily targeted at the Netherlands. Because the largest portion of our group's revenue comes from abroad, the average results are positive. This is all reflected in our annual report, always drafted with the utmost care in view of open and transparent communication. On that note I would like to invite everyone to download the report, including the Dutch summary, from the website. If the economists will prove right in 2015, this will certainly benefit the further development and growth of Andus Group.

I wish everyone a very pleasant holiday. And for those working on our numerous projects, the holiday will follow a little later this year.

With summery regards,

Tom van Rijn
Chairman of the Board

Annual Report 2013



ANDUS GROUP

Serving the industry

CRAFTSMANSHIP AND INVOLVEMENT

FIB Industries' production department is currently working hard manufacturing a vessel. Not a very surprising fact perhaps, until you get to see it. With its 65 mm thick walls, its 520 mm thick flanges and its 68 metric ton weight, it is an impressive sight. As many of the products leaving the FIB gates are. Pure craftsmanship that has positioned the company at the top of the international equipment manufacturing industry. And with passion.

FIB provides and installs customized products globally, in any stainless steel, duplex steels, high nickel alloy and exotic materials such as titanium. They are often complex constructions that are part of high-tech process installations. This includes pressure vessels, columns, reactor inter-

nals, burners and so on. Top quality, matched by very few others. Once again proven by the ISO 3834 welding certificate flawlessly obtained in June. The craftsmanship in the company is nurtured. Because despite the fact that production is being increasingly automated, FIB

remains in close contact with schools and enthusiastically contributes to future welders' education.

Global enjoyment

Apart from specialist equipment manufacturing, FIB has also proven successful in the field of beer systems. In the past breweries used to deliver beer kegs to pubs, but today a beer truck drives up to the front door to fill up a cellar beer installation. FIB pioneered this development and is capable of delivering the entire beer system: from the brewery to the tap. Nowadays 'cellarbeer' is an accepted phenomena worldwide. The FIB systems already

have a strong position on the European market and are also becoming increasingly popular in all corners of the world. And the beer tanks are no longer hidden in the cellar, but are increasingly used as eye-catchers. In that respect the beer market is an 'experience-based market', which must be incorporated in the strategy. And also thanks to Armada Janse's expertise, FIB is one of the best. Both companies cooperated in decorating pubs in Bahrain and the United Arab Emirates. We are proud that Andus Group manages to pull this off.



UNDER HIGH PRESSURE

Many plants such as refineries, aluminium smelters and waste incineration plants are operational day and night. Once every few years large-scale maintenance is necessary which means the production facilities must be stopped. Loss of production during such a shutdown is very costly. Depending on the type of installation, daily costs can amount to millions of euros a day! For such companies it is vital that the installations remain operational without maintenance for as long as possible, and for operations to resume as quickly as possible after maintenance is finished. The Gouda companies do whatever they can to contribute.

The Gouda Refractories' refractory linings are almost always part of 'the heart' of such production facilities. These products are subjected to chemical reactions under (extremely) high temperatures 24 hours a day for years. So the fact that for example the refractory lining of an FCC installation in a refinery requires main-

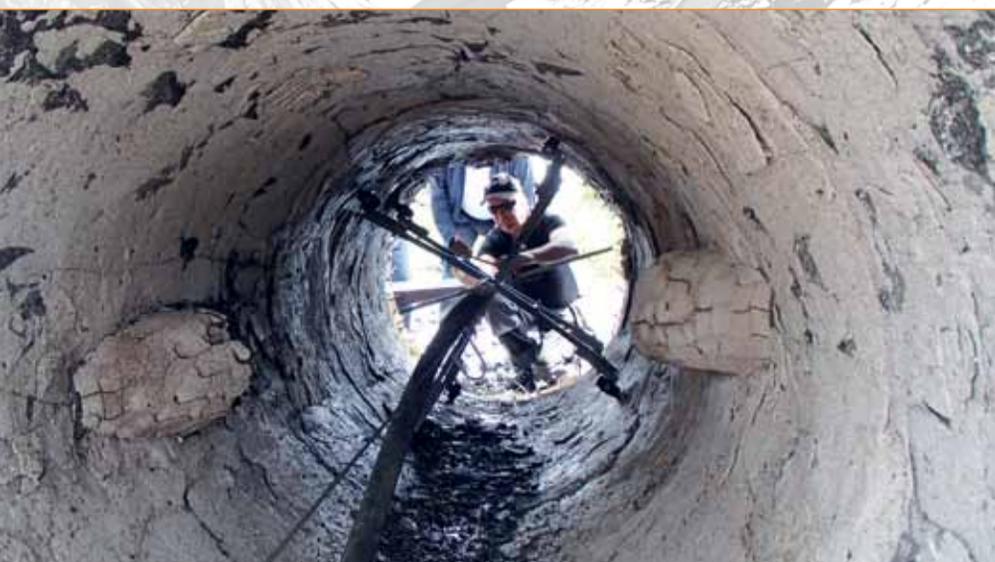
tenance after a certain period of time, does not come as a surprise. Next September the Valero Energy Corporation in Pembroke (UK), where 270,000 barrels of oil products are produced every day, is faced with this situation. Gouda Vuurvast Belgium was hired to get the job done.

Hard work

One of the many jobs during this 'turnaround' involves the 'riser' of the FCC Unit. The pipe of subject is about 40 meters high and has a diameter of a meter and a half. Inside it is covered with a 12.5 cm thick layer of refractory castable. A very tough layer of which about 25 m² needs to be replaced. Traditionally, a worker would descend down this pipe with a pneumatic wreckinghammer to remove the lining bit by bit. A barbaric task because it only allows for 0.25 m² of castable to be removed per day. The demolition alone would cost two teams about 25 days. And that means a lot of barrels ... clearly not the way to go. So then what?

Ingenious solution

Gouda Vuurvast Belgium sought and found a solution. A contact in France provided part of a similar riser pipe which was transported to the UK. A specialised company was engaged. Together they figured out a way to remove the refractory lining: with water! Today an ingenious installation is brought into the pipe and a rotating arm simply washes the concrete away under high pressure (>2000 bar). 16,000 litres of water hammer the castable every hour, exerting a 160 ton force and thereby peeling the skin from the inside of the pipe. A unique invention for both the workers and the client! Because the intense demolition activity is no longer done by hand and the new method is about 4 to 5 times quicker. Now that is thinking along with the client right there.



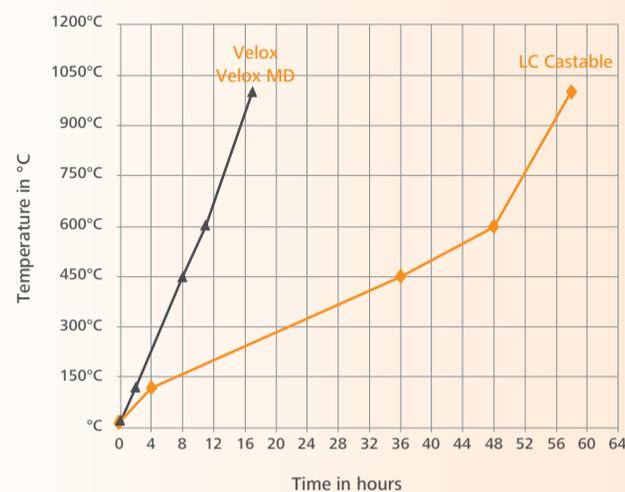
TIME IS MONEY

As described in the article 'Under high pressure', a production facility shutdown costs a lot of money. This also goes for waste incinerators. Gouda tries to minimise the down time. Still, the new refractory lining of a furnace needs time to dry-out gradually. Could we not speed that up?

This was the challenging question that the product developers at Gouda Refractories were facing. Let us be fair: a kiln with a new castable refractory lining cannot be heated up to 1,000 °C temperatures in no-time. Gouda has drafted detailed heating schedules for this process. After about 58 hours of gradually heating it up, the kiln can be taken back into full operation. Pretty fast, one could say. But once again: 58 hours of operational loss costs hundreds of thousands!

Unique invention

The Gouda scientists got to work. Because developing refractory castables is a science. There are products that require a staggering 15 different raw materials to be mixed in the exact right proportions to obtain the unique refractory qualities and long lifespan for extreme environments. And how can one then change this mix to maintain the same qualities, but reduce the 'heating time'? The solution was found and is now on the market as Velox castable.



As powerful as the other Gouda Refractories castables, but with

a heating curve of only 14 - 19 hours. What a saving!

ISN'T IT GREAT WHEN EVERYTHING GOES TO PLAN

In May 2013 we reported in Andustry news about the contract that had been awarded to HSM Offshore by Shell UK for the delivery of the Leman Compression Module. In August this immense construction will leave the HSM yard. The timing is great because in the meantime the production halls are being filled, thanks to Aker Solutions' assignment to produce two process modules for Talisman and an assignment of Chevron Transportation to produce a satellite platform.

The Leman project constituted the delivery of a jacket, a connecting bridge and a topside. Especially the topside was so large (34 x 30 x 30 metres, 3,270 tonnes) that it would not entirely fit in the largest production hall. Another challenge for which HSM came up with the solution to produce everything in parts and assemble them at the yard. It seemed possible in theory...and it proved practical too! Literally all stages of the project as pre-defined on paper, were realised exactly as planned. An immense puzzle where every piece

fell into place. A puzzle with over 20,000 (!) pieces: and that only includes the company provided items, being the delivered compressor elements. A marvelous achievement.

Complex modules

The Flyndre and Cawdor gas fields are in the English and Norwegian part of the North Sea. The Clyde platform takes care of gas extraction there. HSM was given the assignment to deliver two process modules (M12 and M14) that will be connected to the existing plat-

form. This means two constructions of 29 x 16 x 20 metres (1,200 tonnes) and 29 x 13 x 6 metres (333 tonnes) respectively. These modules will also involve a great deal of piping, cables and equipment. But this is nothing new to HSM. Both modules will be shipped in May 2015.

Once again

Some years ago, HSM was assigned to deliver the B13 platform to Chevron. This platform is now in full operation in the upper part of the Dutch North

Sea. B13 is said to meet all expectations and maintain an incredibly high availability rate. This may have contributed to the additional assignments being won. HSM is now employed to deliver the A18 platform which is almost identical to the B13. This is very special, because it is not often that HSM is presented with the opportunity to make such an incredible construction twice. It is expected that the jacket (1,250 tonnes) and the topside (1,000 tonnes) will leave the Schiedam yard mid August 2015.



ALWAYS LOOKING FOR IMPROVEMENT

The NiAl bronze propellers by Van Voorden meet the highest quality standards set by classification societies such as Lloyds Register, Bureau Veritas and Germanische Lloyd. 'No changes required', one could easily say. But it could not be further away from the truth. Van Voorden is constantly looking for new design and production methods to further improve the quality and efficiency.

Soon a new invention will be put into operation at Van Voorden Castings: the rotor degasser. Bronze is melted at a temperature of 1,250°C. This hot 'melt' can contain tiny bubbles of hydrogen

gas. If the bronze is casted and then left to set, so-called gas inclusion may occur. To prevent this as much as possible, the melt is degassed with nitrogen. Up to recently, this was done in the

casting ladle. A fine method, but it did involve temperature loss.

High efficiency

With the rotor degasser the molten bronze is degassed at an earlier stage of the production process; directly inside the furnace. Picture it as an enormous blender that is descended into the hot melt to 'blend' the bronze. During this stir, the rotor degasser blows Argon gas

into the hot mass, which extracts the nitrogen. Result: up to 50% more effective than the previous method! Now a very pure melt is accomplished without temperature loss and the furnace requires less maintenance because the mass is kept in motion. All in all, a sum of advantages resulting in a significantly higher efficiency.



BUILDING IN AFRICA

Whoever will land on Julius Nyerere International Airport in Dar es Salaam, Tanzania in 2017, will be disembarking at the brand-new terminal III: made by RijnDijk Construction. For Tanzania the new terminal is important for the infrastructure and it increases the country's reachability.



Early April, BAM International granted the contract to RijnDijk Construction and engineering has started. RijnDijk Construction will take care of production and installation of the steel construction, the fixed steel parts such as the 'bridges' at the gates and the roofing (15.000 m²). As many as 150 sea containers filled with finished, large steel tubes and plates will be transported to Tanzania after the summer. That is one of the challenges of this prestigious project: logistics. The 30 meter trusses will be produced in parts to facilitate transportation. They will be

welded together when they arrive at their destination.

Quality and safety

Local activities will be performed by local workers. They will ensure that the 300 meter departure hall and the large arrival hall (50 x 70 metre) are constructed in accordance with execution class 3, in accordance with the NEN-EN 1090. All in all an attractive project to be proud of.

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